Textile World
MARCH, 1959
A McGRAW-HILL PUBLICATION

The KNOW-WHY Publication in Textiles
KNOW-HOW

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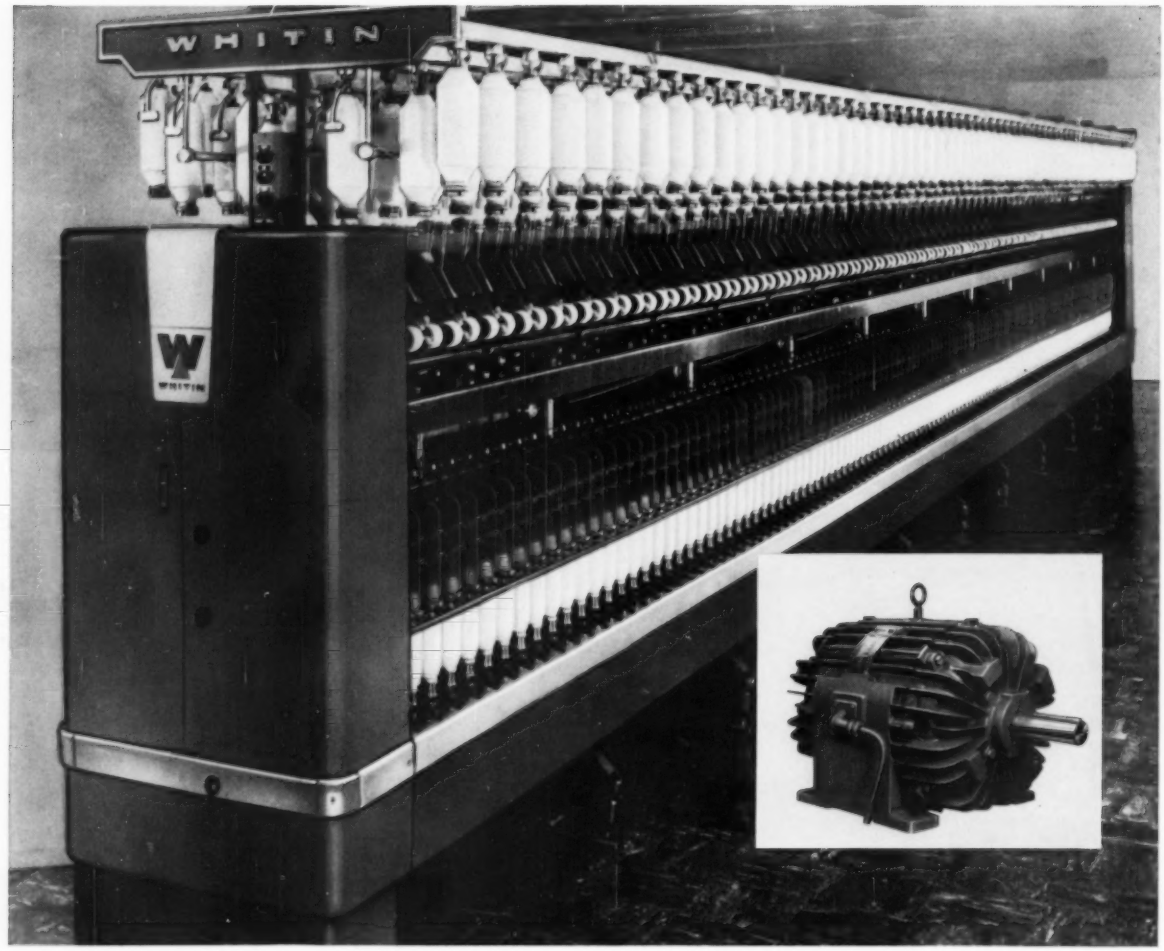

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Described as "the world's most advanced spinning frame," the new "Piedmont" recently announced by Whitin Machine Works, Whitinsville, Massachusetts represents an investment of over a million dollars in research and tooling, and incorporates a score of innovations designed to achieve maximum operational efficiency and productivity in combination with attractiveness in appearance.

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This is another example of DIEHL ability to work closely with machinery manufacturers in the development and manufacture of motors with the precise characteristics needed for efficient machine operation . . . an important reason for using DIEHL motors to power your equipment.

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Production Holds Steady At a Four-Months' Level

Mill production remained just under the 1956 year-end high last month for the fourth month in a row.

TEXTILE WORLD's Index (p. 10) was estimated, on the basis of early tentative figures, to be 111 (1954=100), approximately 10% above the 101 registered in February 1958.

This four-months' high is the only peak in the four years shown on the index chart where production was sustained at the high level for so long. In the 1956 peak, the high level of activity lasted only three months—October, November, and December—before a sharp dip from 112.5 to 108. In the 1957 peak, the high activity lasted only two months—September and October—before a dip from 109 to 106.

●

Seasonal factors account for the wavering index line for the last four months. Production interruptions at the Christmas holidays and New Years are always enough to cause wavers of the amplitude shown on the chart.

As shown in the table accompanying the chart, other indicators also wavered.

- **Employment** in the Latest Month column dropped 10,800.
- **Production** workers dropped 10,200.
- **But earnings** rose slightly in response to a 1¢ increase in average hourly earnings.
- **Prices** held firm at a Bureau of Labor Statistics index of 93.3.
- **Inventories** rose $9-million, and sales dropped $9-million, to raise the inventories-to-sales ratio to 2.26, compared with 2.23 the previous month. But the 2.26 ratio was considerably better than the 2.68 a year ago.

●

What happens from now until July of course is not certain. It has been fairly normal in recent years for activity to show a drop of 4% to 5% and then waver slowly downward to a bottom in July.

But that pattern doesn't always hold. In 1955, the TEXTILE WORLD Index line fluctuated up and down between about four points on the index scale from December 1954 to July 1955 and then shot up 12 index points, amounting to 11.4%, from August to the end of the year.

In many ways, 1959 is similar to 1955 as a business year. A sharp recession occurred in 1954 and another in 1958. So 1955, like 1959, was a year of recovery.

The textile-production pattern this spring, possibly the whole year, has a fair chance of following the 1955 pattern. If it does, there will be no sharp drop. Instead, wavering at the present high level will continue through the summer, with perhaps a small downward trend, followed by a sharp pickup this fall.

It will be that pickup that is the danger. By then, better profits and strong demand will have everybody singing "Happy

Union Guns for Wage Raises

Last month was an active one for the Textile Workers Union of America. In a series of announcements, the union:

- Claimed credit for the early mushrooming round of wage increases in Southern mills
- Appealed to Sct. of Labor James P. Mitchell to raise the Federal minmum wage to $1.25
- Criticized the textile industry for mills acting individually on the wage raises "instead of in a uniform and coordinated manner."

In addition to announcements, the union rolled up its sleeves in preparation for negotiations on contracts expiring or subject to reopening this spring.

With improved conditions in the industry and the wage increases already announced by mills, the union expects little difficulty in obtaining sizable increases in this year's negotiations.

California Still Trying For Primary Textile Mills

Los Angeles will take another step in its efforts to establish primary textile mills in that area.

After a study made in 1957, Mayor Norris Paulson of Los Angeles and several members of his Committee for the Development of the Textile and Apparel Industry tried early last year to stir up interest in the East.

A follow-up study is now scheduled to be made by Douglas G. Woolf, management and marketing consultant and former editor of TEXTILE WORLD, who made the 1957 study.

Reason for the new study is said to be "continued interest" in the prospects of establishing mills on the West Coast and "inquiries for additional information."

Mill Failures Up For January 1959

Both mill failures and liabilities of the failing companies were up in January of this year from January 1958, according to a report by Dun & Bradstreet.

This year, five mills with liabilities of $674,000 failed. In January last year, four mills with liabilities of $275,000 failed.

days are here again," and the temptation to overproduce will be hard to control. The sharp rise in the last half of 1955 led to a corrective slump in 1956 that brought production back to the level from which the surge started.

More Help on Imports Is Now Possible

The textile industry racked up a few moral victories in the seething textile-imports question last month.

- **The Senate Subcommittee headed by Sen. John Pastore got its report on record with Congress.** Although little tangible aid for the industry has came of it yet, the report was regarded as official recognition by Congress that the U. S. textile industry is vital to the country and must be protected against damaging imports.

- **The Treasury Dept. late in January announced that the special import duty imposed in June 1953 on subsidized Uruguayan wool tops would be removed;** but quick and strong objections by topmakers, the National Association of Wool Manufacturers, and several senators succeeded early last month in getting the move postponed and a hearing on the question scheduled.

- **Hong Kong was asked to control voluntarily its rapidly increasing cotton-textile imports to the U. S.**

●

These moves are tentative and assure no positive help for the industry, but they reveal a changed attitude by the government toward the textile industry. Not many months ago, the industry was forced to defend itself against the theory that it is "expendable."

If the Uruguayan wool-top tariff is retained and the Hong Kong imports limitation goes through, they will mean a great deal to the U. S. textile industry.

Before the special tariff was imposed on Uruguayan wool top, subsidized by the Uruguayan government, Uruguay was selling more than 17-million lbs. of top in the U. S. market. That amounted to about one-fifth of U. S. wool-top production.

If the special duty is removed, imports are certain to soar again, U. S. wool men think.

●

Cotton-goods imports from Hong Kong are skyrocketing. According to figures released by The Association of Cotton Textile Merchants, cotton apparel exported to the U. S. by Hong Kong amounted to $670,000 in 1956, $5,721,000 in 1957, and $17,600,000 in 1958—an increase of more than 26 times in two years. In many categories, such as shirts, blouses, and brassieres, the Hong Kong volume is now pushing the volume exported to the U. S. by Japan.

Last month, Asst. Sect. of Commerce Henry Kearns went to

Hong Kong to discuss a voluntary quota. Hong Kong businessmen instantly set up a howl of protests and denunciations, branding the "attacks on Hong Kong" as "unscrupulous and dishonest."

But the howls are not likely to make much difference. It is generally recognized that Hong Kong is not much more than a transshipment point for Red China. With only 360,000 spinning spindles and 9,500 looms, it is not possible for Hong Kong to manufacture the volume of cotton goods it is exporting.

Early this year, Great Britain called a limit to Hong Kong imports—and Hong Kong is politically a British Colony.

With the new temper toward textile imports evident in Washington, it's a fairly safe bet that the U. S. will impose a limitation.

British Textile Industry Rocked by Drastic Change

LONDON—A "revolutionary new doctrine"—antitrust—rocked the textile industry of this country last month.

Late in January, the Restrictive Practices Court ruled that the Lancashire Yarn Spinners Assn.'s agreement on minimum cotton-yarn prices is "not in the public interest." Last month, the industry was trying to assess the far-reaching effects of the decision—and it didn't like the assessment.

Price-fixing agreements have always been a common feature of the British economy, as have various other agreements affecting markets and competition. These agreements gave industry and business a considerable degree of safety and assurance of profits and existence.

Observers think that the court ruling knocking out the yarn-prices agreement may lead to other "harsh" new rulings. If so, industry here will have to learn new methods of doing business, perhaps patterned after the "cut-throat competitive methods of the U. S.," some leaders fear.

●

The Restrictive Practices Court is something new to British industry. It began hearing cases only last October. It is bound by statute to condemn any price-fixing agreement unless the defendant can prove that the agreement is in the public interest.

The Yarn Spinners Assn. argued that their agreement gave "stabilization" to an erratic industry rather than "restriction." Without agreements, it argued, unemployment would increase and the public would have no fair standard of quality.

But in the Court's opinion, overcapacity is the cause of unemployment and the main results of the agreement are high prices to the public and possible loss of export trade. These things are not in the public interest, the Court ruled.

●

Immediate results of the decision were sharp breaks in cotton-yarn prices. As soon as the agreements, in effect since

Cotton Consumption Will Be Up in 1959

Cotton consumption in the U. S. should increase at least 250,000 bales in 1959 over 1958, the National Cotton Council estimates.

In 1958, consumption amounted to about 8-million bales.

If the expected increase occurs, 1959 will see a reversal of a cotton-consumption downtrend that started in 1956.

But world consumption of U. S. cotton is expected to drop again in 1959. Last year, world use of American cotton declined for the first time in 15 years, partly as a result of the world textile recession and partly as a result of increasing cotton production in other countries. The drop in 1958 amounted to about 500,000 bales.

Man-Made-Fiber Production Dropped 9% in 1958

Man-made-fiber production in the U. S. dropped 9% last year from 1957. Total production amounted to 1,606,700,000 lbs. in 1958, compared with 1,764,700,000 in 1957.

But acetate showed a gain. Acetate filament yarn at 222,600,000 lbs. was up 7% from 1957, and staple and tow at 54,400,000 lbs. was up 1%, according to figures published by Textile Organon.

Declines in other man-made fibers were:

- High-tenacity rayon — production 264,500,000 lbs., down 22.5% from 1957
- Regular- and intermediate-tenacity rayon—production 148,600,000 lbs., down 10.5%
- Rayon staple—production 324,200,000 lbs., down 12.5%.
- Noncellulosic filament—production 319,000,000 lbs., down 5%
- Noncellulosic staple and tow—production 170,000,000 lbs., down 6%
- Glass fiber—production 103,400,000 lbs., down 5.5%

●

But U. S. consumption of rayon and acetate was off less than production. While producers turned out 1,014,300,000 lbs., a decline of 11% from the 1,139,400,000 lbs. produced in 1957, mills consumed 1,105,500,000 lbs., only 6% less than in 1957.

U. S. fiber accounted for 1,024,500,000 lbs. of U. S. mill consumption—6% less than in 1957. Imported fiber accounted for the other 81,000,000 lbs.—4.5% less than in 1957.

Textile Men in Canada Want Market Protection

MONTREAL—Canadian textile men are unhappy with the tariff recommendations of the Tariff Board resulting from the hearings held last year.

At the three-months' hearings, which ended in June, Canadian mill men requested reorganization of tariffs on some 50 textile items. Their main concerns were the "tremendous volume of colored cotton fabrics" shipped from the U. S. and growing imports from the Far East.

In a statement on the recommendations made by the Tariff Board last month, the Primary Textiles Institute expressed disappointment that:

- Duty on the U. S. goods was increased only 2.5%—from 20% to 22.5%.
- Nothing was done about Far East imports.

WORLD BRIEFS . . .

New Nylon Plant

LONDON—A new nylon plant to manufacture a full range of nylon yarns for apparel, household, and industrial textile products will be equipped by British Nylon Spinners, jointly owned by Courtaulds and Imperial Chemical Industries.

Site of the plant will be Brockworth, near Gloucester, in buildings bought from the government and formerly occupied by an aircraft engine manufacturer.

Full nylon production is expected by mid-1961.

•

New Rayon Plant In South Africa

LONDON—Courtaulds Ltd. is seeking "sufficient tariff protection" to justify building an $8.4-million rayon plant in South Africa. The spinning plant, if built, would operate in conjunction with the present $23.8-million rayon-pulp plant at Umkomaas, South Africa, owned by a Courtaulds subsidiary.

South Africa now imports all of its viscose yarn, which is used mainly in blankets.

World War II, were declared null and void, low-quality yarns dropped 2¢ a lb. and high-quality fine yarns 7¢ a lb.

Even then, buyers held off, thinking that prices would have to decline further.

Longer range, the government gave some hope of help for the textile industry. The Cotton Board is now preparing a comprehensive report on the industry for the government, and talk of industry "reorganization" is increasing.

Some observers read the signs as meaning the government may give financial help in tightening up the loosely organized industry and perhaps offer some form of compensation for mills that are forced out of business.

•

Whatever comes of government help, observers are convinced of one thing: the British cotton-textile industry has now entered a period of drastic, almost revolutionary, change; and out of it will emerge a new industry organized on new lines and doing business by new methods.

The prospect is not particularly attractive to Lancashire textile men.

FTC Moves Ahead With Labeling Act Rules

WASHINGTON—The Federal Trade Commission says it will have final rules on complying with the requirements of the Textile Fiber Products Identification Act of 1958 ready before June 3. Under the terms of the new law, both FTC's regulations and the act itself become effective March 3, 1960.

The Commission is scheduled to begin public hearings on 45 proposed rules and regulations in Washington this month. The rules set up definitions of terms used in the act, methods of compliance, tolerances, and methods by which new generic names are to be established for new fibers.

Congress, in passing the labeling act, sought to extend the same general principles to textile fibers previously applied by federal laws to wool-products labeling in 1939 and to fur-products labeling in 1951. It covers textile-fiber-content labeling and advertising except as already covered by the wool-products labeling act of 1939.

•

The new law has two objectives:

• To provide consumers with truthful disclosure of fiber content.

• To protect producers, manufacturers, and distributors from hidden presence of substitutes or mixtures in textile-fiber products.

As prepared by FTC's staff under the direction of Harvey H. Hannah, chief of the Division of Textiles and Fur Identification, the new rules cover all major textile-fiber products—such as articles of wearing apparel, handkerchiefs, scarves, bedding,

draperies, tablecloths, towels, umbrellas, flags, furniture slip covers, and cushions.

The rules specifically exclude from the act's labeling and advertising requirements the following products: second-hand household textiles; coated fabrics; products made by company-store operators and sold only to their own employees; and such small items as belts, suspenders, and shoelaces.

•

One proposed rule would establish and define generic names for 16 fibers, such as nylon, rayon, saran, etc. According to Hannah, this rule should end confusion caused by use of multiple tradenames to describe the same kind of fiber.

A related rule sets up a procedure under which fiber manufacturers are to apply to FTC for generic names for new fibers for which no generic names have been established.

Another rule dealing with labeling imported textile-fiber products requires that where the form of such a product is not basically changed, the country where the product was made or processed must be disclosed. However, the label on a product made in the United States out of an imported fabric need not disclose where the fabric was made or processed.

Of considerable industry interest is FTC's handling of the definition of "reasonable tolerances" as provided in the act for stating fiber-content percentages on blended materials. FTC's proposed rule sets "reasonable tolerance" at a figure of 3% plus or minus. According to the rule, if the percentage (by weight) of the fiber present does not deviate by more than 3% from what is claimed on the label, the product would not be misbranded.

Mills' Sales and Profits Continue To Improve

The improved profits picture for the latter part of 1958 shown by most mill operating statements continued with reports coming in last month.

Here's how several companies fared:

• Joseph Bancroft & Sons

For the six months ended Dec. 31, 1958 sales were $11,429,263 versus $10,656,793 in the same period of 1957. Net income was $324,467, compared with $40,190 in the 1957 period. The company's earnings amounted to 37¢ a share of common stock.

• Burlington Industries

For three months ended Dec. 27, sales were $182,943,000 compared with $170,284,000 in the same period of 1957. Net income was $4,248,000, compared with $4,107,000 in the same 1957 period. Earnings amounted to 46¢ a share, with 8,497,348 common-shares outstanding.

• Collins & Aikman

For nine months ended Nov. 29, sales were $32,741,000, an

New Textile Mill Opens in Holland

AMSTERDAM—A completely modern 360-loom cotton mill, built at an investment of 4-million to 5-million guilders, was officially opened here early this year.

Built by Nijverdal-Ten Cate, a company formed by merger of the two textile firms last year, the new mill is equipped with the latest and most advanced equipment, including air conditioning.

Plans call for increasing the 360 looms to 480. Production of the new mill will then amount to one-twelfth the total output of the company.

•

Italians To Build Rayon Plant in Russia

MILAN—The Italian firm Chatillon Artificial Fibres Co. will build a big rayon mill in Russia and send technicians to teach Russians how to run it.

The plant will be built at Saratov, on the Volga river 180 miles from Stalingrad. At full capacity, the plant will employ 2,000 workers.

•

Britain and Red China Step Up Business

LONDON—Britain's exports to Red China stood at $74.8-million and imports from China at $51.9-million last year—a total export-import trade of $126.7-million. That's a fourfold increase in the last five years.

Textile exports to China included $18.5-million worth of wool top and animal hair, $917,000 worth of man-made fibers and woven cloth, and $940,000 in miscellaneous textiles—a total of $20,357,000, more than a quarter of all exports.

Textile imports from China included $6.2-million worth of cotton gray goods and $2.7-million worth of miscellaneous manufactured textiles.

•

China Shocks British Traders

LONDON — The British Cotton Waste Assn. got "a very great shock" late in January when Red China cancelled delivery of several thousand tons of cotton and cotton waste to Britain.

This was China's first default on scheduled deliveries since Britain and China resumed trade at the end of World War II. No reason was given for the cancellation.

How Russian Worker Spends His Money

MOSCOW—Important shifts in how the average textile worker with a family spends his money have occurred since 1908, according to a comparison between 1908 and 1958 published by Institute of Labor research associates.

In 1908, the board of the Petersburg Textile Union made an inquiry into textile workers' budgets; and late last year the Institute of Labor made a similar study.

Here is the published comparison:

	1908	1958
Rent, heat, light	14.60 (%)	3.8 (%)
Clothing	15.72	22.6
Food	54.99	45.9
Vodka, wine, beer, tobacco	3.72	1.9
Sanitation, hygiene*	3.84	2.5
Newspapers, magazines, movies, theater, etc.	2.67	6.3
Other expenditures	4.46	17.0**

* Includes medical services

** Includes nurseries, kindergartens, vacations, postage, insurance, and miscellaneous fares.

•

Austrian Fiber Producer Cut Costs, Increased Profit

VIENNA—A profit increase of 100-million Austrian schillings, equivalent to $3,864,161, was racked up on export fiber business last year by the Austrian fiber producer Zellwalle Lenzing A. G.

The increase came entirely from cost-cutting. The volume of exports in 1958 was the same as in 1957.

The principal cost savings came from reducing loss of materials through a new materials-reclamation division and reducing power costs with new pulp machines.

•

U. S. Textile Firms Boycotted by Arabs

BEIRUT—Three U. S. textile companies are on the boycott list of the Arab League that went into effect the first of last month.

The companies are Beaunit Mills, Rogosin Industries, and M. Lowenstein. Dow Chemical Co., now also a increase of $1,771,000 over sales in the same period of 1957. Earnings were $684,000, amounting to $1.22 a share, compared with $745,000, amounting to $1.34 a share in the 1957 period.

• The Kendall Co.

Sales for the year totaled $103,382,000 in 1958, compared with $106,822,000 in 1957. Net earnings were $3,805,000, amounting to $3.60 a share on the common stock after preferred-stock dividends, compared with 1957 earnings of $4,005,000, amounting to $3.80 a share.

• Riegel Textile Corp.

For 16 weeks ended Jan. 17, sales were $26,648,388, compared with $23,966,715 in the same period in 1957. Net income was $265,435, amounting to 25¢ a share of common stock, compared with $169,955, amounting to 14¢ a share, in the 1957 period.

Man-Made-Fiber Use Continues To Grow

Man-made fibers increased their share of total fiber consumption from 20% in 1949 to 26.5% in 1957, according to a study made by the Textile Economics Bureau.

Total fiber consumption rose from 5,614,500,000 lbs. in 1949 (a recession year) to 6,376,900,000 lbs. in 1957.

Here's how different fibers fared:

	1949		1957	
	Lbs.	% of Total	Lbs.	% of Total
Cotton	3,767,100,000	67.0	4,085,400,000	64.0
Wool	734,900,000	13.0	605,600,000	9.5
Rayon, acetate	1,023,700,000	18.0	1,168,000,000	18.5
Noncellulosics	88,800,000	1.5	517,900,000	8.0
Total	5,614,500,000		6,376,900,000	

Albany Felt Co. Makes Big Move Into Mexico

MEXICO CITY—Albany Felt Co., Albany, N. Y., is moving into the Mexican textile market with a 75% share of a $2-million deal in combination with Nordiska Maskinfilt Aktiebolaget of Halmstad, Sweden.

The deal brings together two industrial-felt giants. Albany Felt is one of the world's largest felt manufacturers and Nordiska is Europe's largest.

The new Mexican company and plant will be called Albany Nordiska de Mexico S. A. and will aim most of its production of felt at Mexico's booming paper industry.

Albany Felt spokesmen in Mexico City said that the company had studied several countries throughout the world and chose Mexico for its first foreign-investment venture. (The company does have one plant in Canada.)

Reasons for choosing Mexico were centered on the country's growing paper industry and the fact that new paper-mill plans have been announced for the future.

Late last year, a $16.5-million newsprint plant was opened in the State of Oaxaca, southern Mexico; and other plans for more paper projects are in the wind. Mexico has been importing industrial felt for papermaking, but the new Albany-Nordiska plant claims it will be able to supply all of Mexico's demand for felt.

Initial production of Albany-Nordiska will be 10,000 lbs. per week, with this figure being upped as the demand increases. Key raw material will be wool, but some man-made fibers such as nylon and Dacron may be used when production of these fibers is in sufficient local supply.

Albany will build and operate the plant, and the Swedish group will supply 25% of the capital and some processes.

1959 Cotton May Be 3¢ a Lb. Lower Than 1958

A flurry of forecasting 1959 cotton prices hit last month as soon as the Dept. of Agriculture announced the 1959-crop support-price levels. Most of the analyses backing up predictions had one thing in common: they expect lower cotton prices for the 1959 crop.

The support levels were placed at 30.4¢ a lb. (Middling 7/8-in.) for Choice A cotton and 24.7¢ a lb. for Choice B.

For the 1958 crop, the support level was 31.23¢ a lb. (There was no Choice B cotton until this year.)

(Choice A cotton is cotton grown under acreage allotment at a support level not less than 80% of parity as of Aug. 1, 1959. Choice B cotton is cotton grown under the additional-acreage permissible allotment at a support level 15% below the Choice A level.)

•

What the new cotton policy will mean to mills in lower cotton prices depends largely on how much Choice B cotton is grown. Estimates range from 5-million bales to 7-million bales to equal Choice A cotton.

If about as much Choice B cotton as Choice A is available, the support price will average about 27¢ to 28¢ for 7/8-in. Middling and about 32¢ for 1-in. That's about 3¢ a lb. less than 1958 prices. With the government-loan price on 1958 cotton averaging 31.23¢ a lb., 1959 cotton would be available at about 28¢ or a little better on average.

But as the supply of Choice B cotton drops below Choice A, the average price will rise from the 1959 parity price of 24.7¢ for Choice B toward the 30.4¢ for Choice A.

fiber producer in the U. S., was on the boycott list of chemical companies.

These firms will not be allowed to operate, have representatives, establish branches, or sell their products in the Arab League countries.

Reason for the boycott is said to be that the firms have economic and industrial interests in Israel.

•

Russia Increases Cotton Production

VIENNA—Russia increased its cotton yield 125,000 metric tons last year as the result of better planting and harvesting methods, according to a Soviet announcement.

Production last year was placed at 4,335,000 metric tons, compared with 4,210,000 metric tons in 1957.

Planting was largely by the "square cluster sowing method," and much of the crop was harvested mechanically.

•

Austria's Textile Men Object to Japanese Imports

VIENNA—The textile industry of Austria was "surprised" by the proposal of Juluis Raab, Austrian chancellor, that Austrian and Japanese industrialists should meet to find ways to increase Japanese textile exports to Austria.

Austrian textile men say that Japanese competition has already been felt by them in the Austrian fabric market and the West German rayon-staple fiber market.

They point to the dismissal of 10,000 Austrian workers in 1958 as evidence that Austrian mills are in no position to turn more of their domestic market over to the Japanese.

•

Holland To Get Du Pont Orlon Plant

AMSTERDAM—Du Pont has firmly decided to build a new plant to manufacture Orlon acrylic fiber at Dordrecht (south of Rotterdam). It will be a multimillion-dollar investment.

Plans are to manufacture 15,000,000 lbs. of Orlon staple and tow a year for customers in Europe (including the United Kingdom).

Construction work will start this year, and production will start some time during the last quarter of 1961.

The plant site is 40 acres situated at deep navigable water 12 miles from Rotterdam.

Index of manhours worked in the textile industry adjusted for changes in productivity

Textile World's Monthly Indicators

	Latest Month	Previous Month	Year Ago
Textile World's Index (1954=100)	**111**	**110**	**101**
Employment (thousands) B.L.S.	942.3	953.2	949.9
Production Workers (thousands) B.L.S.	851.7	861.9	859.5
Weekly Earnings B.L.S.	$61.20	$61.10	$56.25
Hourly Earnings B.L.S.	$1.53	$1.52	$1.50
Weekly Hours Worked B.L.S.	40.0	40.2	37.5
Production Index (1947-49=100) F.R.B.	100	107	94
Wholesale Price Index (1947-49=100) B.L.S.	93.3	93.3	94.6
Manufacturers' Sales (million $) Commerce	1093	1102	999
Manufacturers' Inventories (million $) Commerce	2465	2456	2679
Inventories-to-Sales Ratio	2.26	2.23	2.68
Exports (million $) Commerce	88.8	96.8	151.8
Imports (million $) Commerce	74.5	79.2	82.9
Stock Price Index (1941-43=10) Standard & Poor's	26.38	26.04	18.85
Failures (number) Dun & Bradstreet	5	4	4

National Economic Indicators

	Latest Month	Previous Month	Year Ago
Industrial Production (1947-49=100) F.R.B.	143	142	133
Consumer Price Index (1947-49=100) B.L.S.	123.7	123.9	121.6
Wholesale Price Index (1947-49=100) B.L.S.	119.5	119.2	118.8
Population (millions) Census	173.0	172.8	170.1
Unemployment (millions) Census	4.7	4.1	4.5
Employment (millions) Census	62.7	64.0	62.2
Personal Income (billion $) Commerce	362.3	359.9	348.8

For more data, circle A-1 on Reader Service Card →

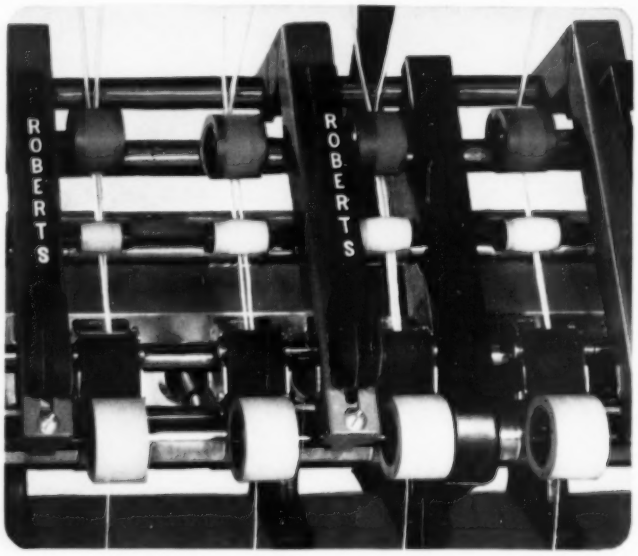
Cut Application Time and Maintenance Cost. Draper original repair parts are designed to meet specific loom conditions. Range of fabrics, loom speed, loom size and model, all influence the development of a Draper original repair part. Ease of application and accessibility are prime requisites in their manufacture. Original Draper parts cost less in the long run.

DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N. C. • SPARTANBURG, S. C.

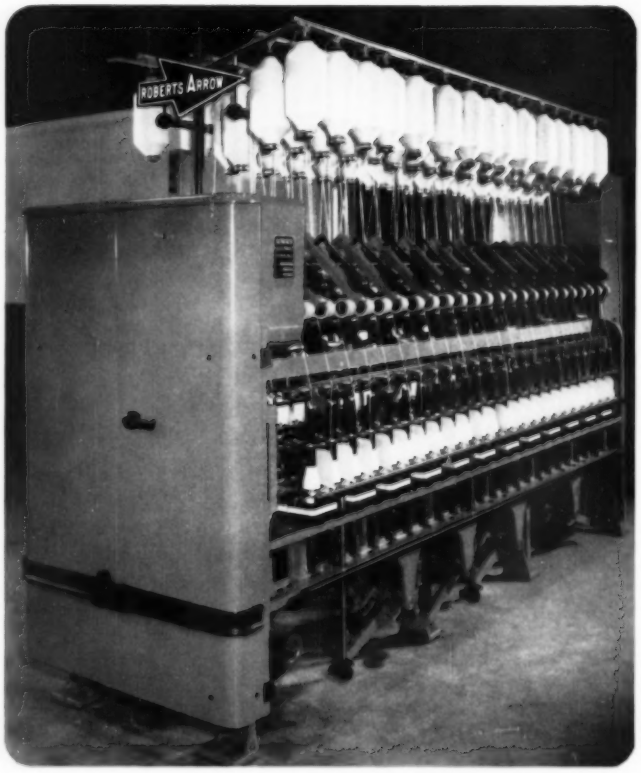
ROBERTS ARROW *LONG FIBER* SPINNING

- Any Fiber or Blend Synthetic or Natural
- Any Staple Length From 1½ to 8 Inches
- No Roll Setting Changes Needed at Any Time
- All Ball Bearing Construction For Smooth Operation



WITH ROBERTS *PermaSet* DRAFTING

ROBERTS ARROW



WM-2 ARROW *ShortFlo*

Rugged Chassis with Ball Bearings Throughout

Unitized Sectional Construction

Four-Roll Double Apron Drafting System

For Long-Staple Spinning, 100% or Blended

Drafts: 20 to 25 for Wool and Blends
25 to 50 for Synthetics and Blends

Front Roll Pressures from 90 to 120 pounds

UnitVac Power Suction Cleaning with Individual Removable Flutes

Roberts AeroCreel Handles Large-Package Roving

Simplified Reverse Twist Arrangement

Completely Adjustable Draft, Lay, and Twist Constants

One Master Set of Gears for All Changes

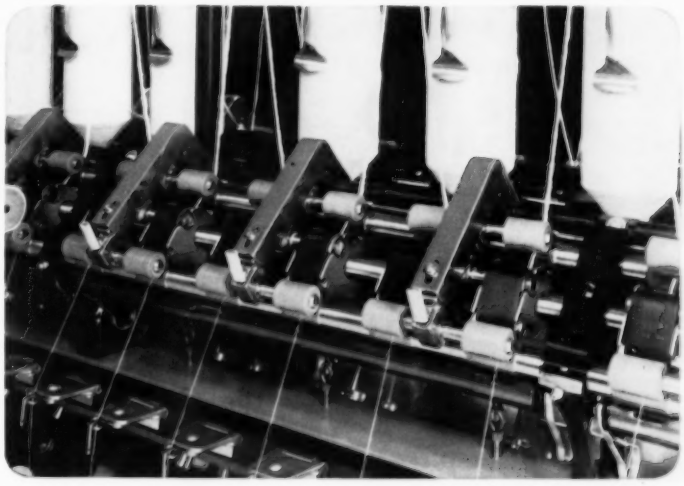
Actual mill tests have proved that the ARROW WM-2 Worsted Frame gives higher quality yarns with fewer ends down and more even running at higher drafts and higher front-roll and spindle speeds.

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

THE MOST SENSIBLE ANSWER TO GADGET-FREE TOP ROLL SUSPENSION

ROBERTS *PosiWate* SUSPENSION SYSTEM

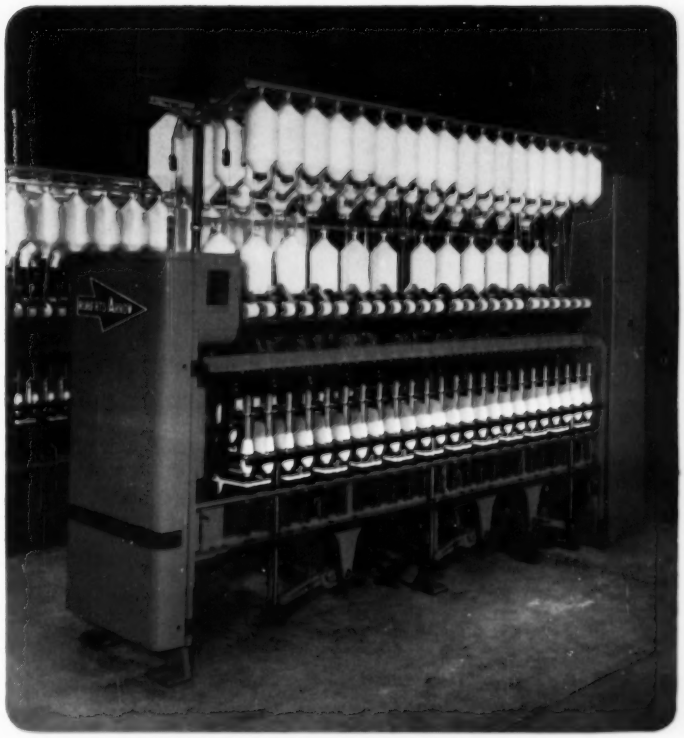
Elegantly simple, the Roberts PosiWate Top Roll Suspension System is completely free of hooks, unpredictable short springs and other gadgets. PosiWate recovers the best features of positive weighting and weight distribution used and proven in several million spindles insuring uniform performance from spindle to spindle.



A FEATURE OF

ROBERTS ARROW

ALSO AVAILABLE AS CHANGE-OVER MODERNIZATION ON ANY MAKE OF FRAME



Very Advanced

ARROW SPINNING features:

- PosiWate Top Roll Suspension
- UnaRing Balloon Control
- EvenGrip Fluted Bottom Rolls
- Roberts Supreme Ball Bearing Spindles
- Double-Apron High Draft System
- UnitVac Power-Suction Cleaning
- Roberts All-Ball-Bearing Head
- Unitized Sectional Frame
- AeroCreel with Latch-Type Bobbin Holders
- Flexibility For Cotton And Synthetics

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

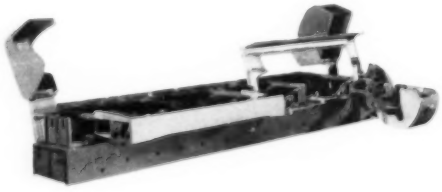
For more data, circle A-3 on Reader Service Card

Investigate Ideal's Liberal Trade-In Allowance on Your Old Drawing Frames

At a very substantial reduction in cost, Ideal will rebuild your drawing frames new, or will furnish you with completely factory rebuilt drawing in either 16" or 18" gauge four delivery frames with the famous Feathertouch action. These are *not* mill changeovers. Every working part above can table is brand new and the drawing is equal in appearance, performance, production, efficiency and quality to *any* completely new drawing on the market. These complete frames are delivered to your mill ready to run, thus eliminating downtime, and inconvenience of rebuilding in your mill. Don't buy *any* drawing until you have investigated this money saving offer. Write, call, or wire for complete information today.

Some Features:

Individual Vacuumatic Cleaning
Individual Motors Individual Drives
Electro-Magnetic Clutch
Electric Knock-Off Actions
Ball Bearing Spacing Sections
No Shafting, Flat Pulleys, or Belts
The Famous Feathertouch Action
—produces highest quality sliver at over 400 ft. per min.
Frames can be operated singly or in multiples



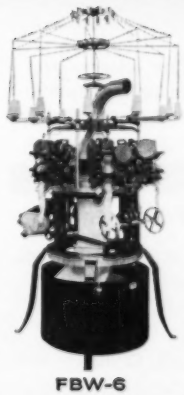
These parts are completely reconditioned and refinished.

Ideal Industries, Inc.
Bessemer City, N. C.

THE ORIGINATORS OF HIGH SPEED DRAWING

For more data, circle A-4 on Reader Service Card

For more data, circle A-5 on Reader Service Card →



FBW-6

Luxury Underfoot . . . . .

Fabrics produced on the Wildman Jacquard "Hi-Pile" knitter now include a colorful range of floor coverings. • *Popular and practical,* these "Hi-Pile" rugs open still another market for this versatile machine. • The Wildman Jacquard FBW-6 offers a wide range of fabrics in natural or synthetic fibers. • For complete information write:

WILDMAN JACQUARD

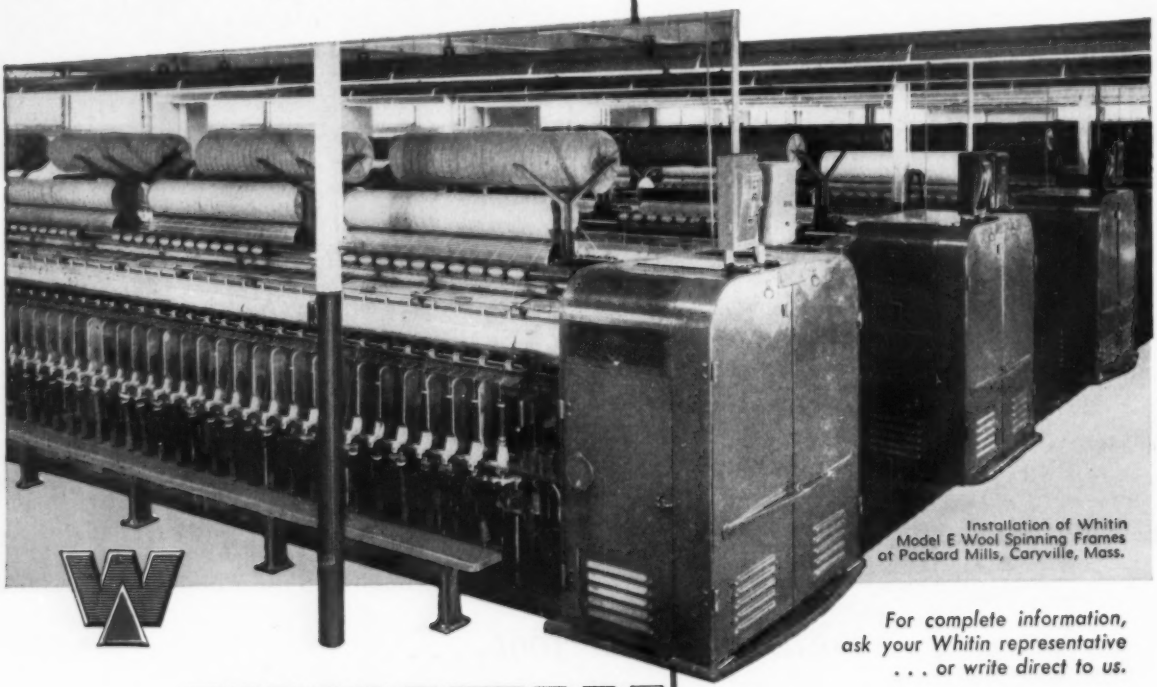
WILDMAN JACQUARD CO. • 1210 Stanbridge Street • Norristown, Pennsylvania
Manufacturers of HEMPHILL BANNER Knitting Machines

a subsidiary of Draper Corporation, Hopedale, Mass.

16 GOOD ways to get BETTER results from the BEST wool frames you ever owned

Whitin Model E Wool Spinning frames have been known for many years as the "work horses" of the industry. Their reputation for efficiency in producing highest quality yarn at lowest cost per pound is firmly established. However, since its introduction to the industry, many new mechanical improvements have been developed which greatly increase its overall performance. Mills which for years have relied upon the Model E now have the opportunity — and at relatively low cost, too — to get better results from these frames by installing a combination of the new parts and accessories now available.

1. "Magic-Grip" drive sprockets 2. Oilless front top roll weight hooks 3. Cylinder replacement pulleys 4. No slip drum covers 5. Simplified application for ring auto-lubrication 6. New upright lay shafts 7. Reworked twister heads 8. Anti-friction twister heads 9. Balloon control rings 10. Anti-friction idler gears 11. Improved thrust box for traverse motion 12. New full-fluted type delivery rolls 13. Adjustable roving guides and nylon B.B. inserts 14. Simplified main shaft bearing assembly 15. New type traverse cams 16. Roving guide traverse motion assembly



Installation of Whitin Model E Wool Spinning Frames at Packard Mills, Caryville, Mass.

For complete information, ask your Whitin representative . . . or write direct to us.

WHITIN MACHINE WORKS

WHITINSVILLE MASSACHUSETTS,

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

The new Foster plant of Alice Mfg. Co., Easley, S. C., is expected to go into operation this fall. It will produce broadcloth. At full capacity the new plant will employ about 400 people. It will have about 200,000 sq. ft. of floor space with a straight-line flow. There will be about 40,000 spindles and 600 looms. E. H. Atkins will be superintendent.

Bartlett Mills, Harmony, Me., has been bought by Russell E. Sullivan.

Berkshire Knitting Mills, Reading, Pa., has announced the formation of Berkshire Knitting Mills (Canada) Ltd. Leonard Manks has been named president.

Bibb Mfg. Co., Macon, Ga., has been awarded first prize for its sheet and pillowcase package in the soft-goods Textile Div. at the third annual competition of the National Flexible Packaging Association.

The Boss Co., which operates Mountain Rug Mills, Fletcher, N. C., is planning a $150,000 tufted-rug plant in Asheville, N. C.

Borg Fabric Div., Amphenol-Borg Electronics Corp., Delavan, Wis., is planning an addition to its Jefferson, Wis., plant for completion and occupancy by April. New equipment has been ordered.

Burlington Industries, Greensboro, N. C., has formed Rhodhiss-Pacific Mills, a new division responsible for the manufacture and sale of fabrics of man-made fibers and blends used in men's, boys', and women's wear. The plants are in Rhodhiss, N. C.

Cabin Crafts, Inc., Dalton, Ga., has announced a licensing agreement with Gamlestadens Fabrikers Aktiebolag, Goteborg, Sweden, a division of Svenska Kullager Fabrikerna. Under the terms the Swedish firm will have full access to patents held by Cabin Crafts on tufting machines and accessories. Cabin Crafts has signed a similar agreement with Harding Carpets Ltd., Brantford, Ont., Canada. Cabin Crafts will also make available its technical know-how in tufting operations.

Canterbury Knitters Ltd., New York, N. Y., has formed a subsidiary corporation, Stony Mills Ltd., in Jamaica, West Indies. It will manufacture knitted garments and will employ more than 250 workers.

Cleveland Cloth Mills, Shelby, N. C., will build an addition to its plant at a cost of $14,000.

Calvine Cotton Mills, Inc., Charlotte, N. C., is planning to reopen Greenwich Printing & Dyeing Co., East Greenwich, R. I.

Dan River Mills, Inc., Danville, Va., will spend more than $4 million for new machinery and the modernization of present equipment.

Dauray Textiles, Inc., Woonsocket, R. I., has merged into French Worsted Co. and will operate as a division producing Textralized man-made and novelty yarns.

Ellenboro Mills, Ellenboro, N. C., has announced that equipment has been added to increase production by 50%. Some of the new equipment is now in operation.

Highland Knitting Mills, Philadelphia, Pa., has consolidated its facilities into its West Orange, N. J., plant.

Hornwood Warp Knitting Corp., Wadesboro, N. C., has bought a second mill in Wadesboro and will operate this plant as a subsidiary firm known as Hornwood Textiles, Inc. The company is also buying 12 new tricot machines.

Indian Head Mills, Inc., New York, N. Y., has agreed to purchase Linen Thread Co., Inc., a wholly owned subsidiary of Linen Thread Co. Ltd., Glasgow, Scotland. Linen Thread's principal plants are located in Paterson and Kearny, N. J., and Blue Mountain, Ala. Indian Head will operate the company as a wholly owned subsidiary. The sale is subject to the approval of the British Treasury.

The Kendall Co., Kendall Mills Div., Walpole, Mass., has announced the formation of two specialized vertical marketing sections following the consolidation of the marketing function of the company's Cotton Mills and Kendall Mills Divisions into a single unit. This move places the entire marketing responsibility for gray goods and finished goods with the Kendall Mills Div.

Massachusetts Mohair Plush Co., Inc., New York, N. Y., has announced that equipment has been bought to increase production on pile fabrics.

Merrill Woolen Mills, Merrill, Wis., has been bought by Rock River Woolen Mills, Janesville, Wis. Merrill Woolen Mills will operate as a subsidiary of Rock River. Lyndon Emerich will remain as general manager of all operations in the Merrill Div.

Nashua Textile Co., Nashua, N. H., plans to liquidate as soon as remaining orders have been filled. The company employs 325.

Frank S. Nelson & Co., Inc., Philadelphia, Pa., is adding a two-story, 15,000-sq.-ft. building to its plant on Fountain St. The new building is designed to consolidate warehousing requirements, provide more efficient shipping and receiving, and facilitate materials handling.

Springs Cotton Mills, Lancaster, S. C., has announced a $2-million expansion program for its Grace Bleachery.

Standard Textile Mills, Charlotte, N. C., is completing a new building at Cartersville, Ga., and will manufacture wool and man-made-fiber carpet yarns.

Woodside Mills, Simpsonville Plant, Simpsonville, S. C., will expand its weave room for the installation of 146 new Draper XD dobby-equipped looms.

Textile World

CALENDAR

March

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., March 4

Institute on Industrial Relations, sponsored by the National Association of Manufacturers, Hollywood Beach Hotel, Hollywood, Fla., March 9 to 13

American Society of Mechanical Engineers, Textile Engineering Div., annual spring meeting, Clemson House, Clemson, S. C., March 12 & 13

ASME Lubrication Div., annual spring meeting, Franklin Institute, Philadelphia, Pa., March 16 & 17

Southern Textile Methods and Standards Association, spring meeting, Clemson House, Clemson, S. C., March 19 & 20

American Cotton Manufacturers Institute, annual convention, Palm Beach Biltmore Hotel, Palm Beach, Fla., March 19 to 21

AATCC, South-Central Section, Hotel Patten, Chattanooga, Tenn., March 21

Textile Research Institute, annual meeting, Hotel Commodore, New York, N. Y., March 23 & 24

Textile Quality Control Association, spring meeting, North Carolina State College, Raleigh, N. C., March 26 & 27

AATCC, Hudson-Mohawk Section, Chelsea House, Tribes Hill, N. Y., March 27

April

Annual Conference on Electrical Application in the Textile Industry, Heart-of-Atlanta Motel, Atlanta, Ga., April 2 & 3

Alabama Textile Manufacturers Association, annual meeting, Buena Vista Hotel, Biloxi, Miss., April 8 to 10

National Packaging Exposition, sponsored by the American Management Association, International Amphitheatre, Chicago, Ill., April 13 to 17

ACMI Cotton Fiber Testing Laboratory's Open House, Clemson House, Clemson, S. C., April 15 & 16

National Knitted Outerwear Association, annual meeting, Waldorf-Astoria Hotel, New York, N. Y., April 15 & 16

Cotton Manufacturers Association of Georgia, annual meeting, Diplomat Hotel and Country Club, Hollywood Beach, Fla., April 22 to 25

Institute of Textile Technology, meeting of the Technical Advisory Committee and Board of Trustees, Institute of Textile Technology, Charlottesville, Va., April 28 & 29

The Fiber Society, Inc., spring meeting, Fontana Village, N. C., April 29 & 30

May

Alabama Textile Operating Executives, spring general meeting on slashing and weaving problems, Thach Auditorium, Auburn, Ala., May 2

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., May 4 to 8

National Association of Hosiery Manufacturers, annual meeting, Claridge Hotel, Atlantic City, N. J., May 4

Underwear Institute, annual meeting, Hotel Traymore, Atlantic City, N. J., May 5

Tufted Textile Manufacturers Association, annual convention, Hollywood Beach Hotel, Hollywood Beach, Fla., May 13 to 16

Cotton Research Clinic, sponsored by the National Cotton Council, Grove Park Inn, Asheville, N. C., May 12 to 14

South Carolina Textile Manufacturers' Association, annual meeting, The Cloister, Sea Island, Ga., May 28 to 30

June

Material Handling Institute's Exposition, Public Auditorium, Cleveland, Ohio, June 9 to 12

September

3rd International Textile Exposition, Milan, Italy, Sept. 12 to 21

October

Textile Quality Control Association, fall meeting, Grove Park Inn, Asheville, N. C., Oct 1 & 2

Chemical-Finishing Conference, sponsored by the National Cotton Council, Mayflower Hotel, Washington, D. C., Oct. 7

AATCC, annual convention, Sheraton-Park and Shoreham Hotels, Washington, D. C., Oct. 8 to 10

North Carolina Textile Manufacturers Association, annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 8 & 9

Alabama Textile Operating Executives, fall general meeting on carding and spinning problems, Langdon Hall, Auburn, Ala., Oct. 10

1960

May

American Textile Machinery Exhibition, Atlantic City, N. J., May 23 to 27

October

21st Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 3 to 7

THREE MACHINES . . .
TOP-QUALITY PRESSED ROLLS

Butterworth *DURA-SMOOTH* Rolls play a vital part in the finishing end of the textile industry. The right roll for the job . . . the right material . . . the right degree of hardness and smoothness . . . all contribute to economical finishing and uniform quality control.

For example, in a Butterworth Water Mangle, pressures up to 15 tons require Butterworth *DURA-SMOOTH* special rolls, designed for heavy-duty service and long, trouble-free operation.

In a Butterworth Embossing Calender, Butterworth *DURA-SMOOTH* Rolls provide uniform embossing characteristics, with no variation from lot to lot. That's because all Butterworth Rolls are quality-controlled at every step in manufacture.

And in a Butterworth Calender, pressures are accurately adjusted to each side of the roll, for even pressures across the face. Butterworth *DURA-SMOOTH* Rolls never loosen or slip . . . they're locked on a forged steel shaft under controlled pressure.

New or refilled, there's a Butterworth *DURA-SMOOTH* Roll for every finishing need. Call or write today for a quotation on your requirements.

H. W. BUTTERWORTH & SONS COMPANY

Bethayres, Pennsylvania **187 Westminster Street, Providence, R. I.**

Division of Van Norman Industries

Representatives in Principal Cities of the World

Machines for Bleaching, Boiling-Out, Dyeing, Mercerizing, Finishing, Embossing, Pot Spinning Machines for Synthetic Fibers : : Calender Rolls : : Tenter Chains

BUTTERWORTH
Serving the Textile Industry Since 1820

MODERN DYEHOUSE EQUIPMENT

THE DEPENDABLE KWG SKEIN DYEING MACHINE

KWG Double Reel Skein Dyeing Machine —all stainless steel unit built in capacities to 1000 pounds.

FOR QUALITY DYEING

WITHIN INCREASED BUT MORE NORMAL TEMPERATURE and PRESSURE LIMITS

Perfection in dyeing—for natural and the new synthetic fibers—is yours with KWG Skein Dyeing machines. Rugged construction . . . improved 'Ferrous-Wheel' performance . . . give you the penetration and evenness of color—the permanence of tone—for that extra measure of sales appeal—without concern for costly high-temperature, high-pressure methods. Dual-operations possible including scouring, dyeing and shrinkproofing, or scouring, bottom bleaching and dyeing of pastel shades.

You can point the way to extra sales . . . extra profits . . . today by writing Klauder Weldon Giles. A KWG representative will be glad to survey your needs. If necessary, he'll design special equipment to your specifications. There's no obligation.

Klauder Weldon Giles MACHINE COMPANY

ADAMS AVENUE & LEIPER STREET • PHILADELPHIA 24, PA.

For more data, circle A-8 on Reader Service Card

QUESTIONS & ANSWERS

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenvile, S. C.

How To Card High-Bulk Orlon

Technical Editor:

How should we run our conventional flat cards on high-bulk 1- to 3-den., 1½-in. Orlon? The blend we use is 60% regular and 40% high bulk. (1426)

Usually, 1-den. Orlon requires a special fancy at the card; but the attachment should not be necessary for 2- and 3-den. fiber.

Card settings should be a little wider than standard, but speeds can be more or less conventional. For example, good results have been obtained with cylinder speed 165 rpm., doffer 8 rpm., lickerin 365 rpm., and flats 2½ ins. per min.

Typical settings are: cylinder to doffer 0.007 in., flats to cylinder 0.012 in., back plate 0.029 in., top plate 0.022 in., front plate 0.017 in., and bottom screen 0.034 in.

With these settings and speeds, cards should produce about 9 lbs. of stock per hour. Mote knives can be removed and solid screens installed to reduce waste.

Napper Waste Is Hard To Spin

Technical Editor:

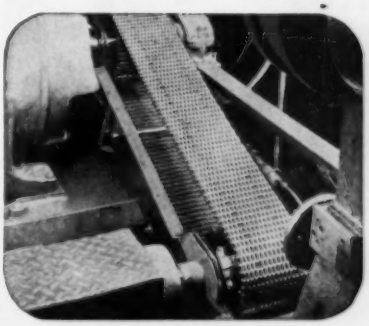
We get lots of napper waste from blankets made from 50-50 Orlon-rayon filling on cotton warp. Can we use this waste to spin some product on our cotton machinery? (1422)

Napper wastes are difficult to spin. The fibers in this waste have a maximum length of 1⅜ in. but a mean length of 0.468 in. However, 50% of the fibers are below ½ in.

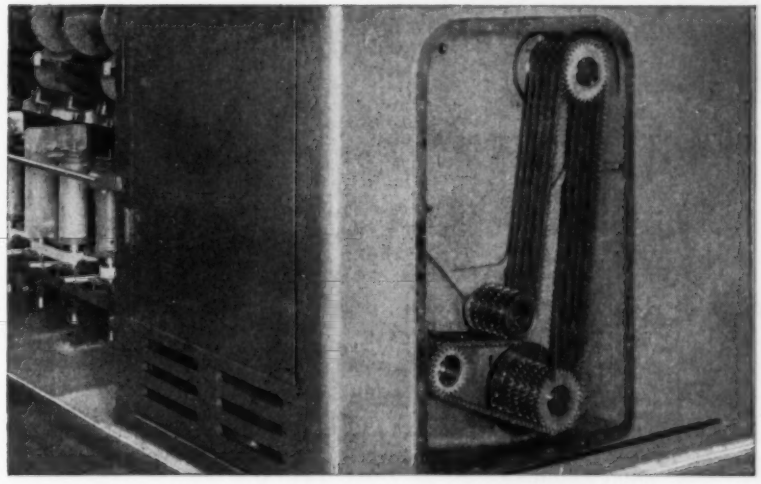
You will be able to make mop yarn or other coarse yarns out of this waste with a blend of other fibers. We sug-

How LINK-BELT silent chain comes through industry's stiffest tests

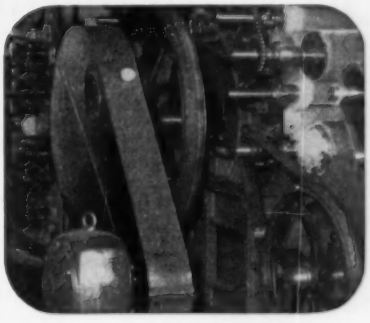
No other drive can do the same



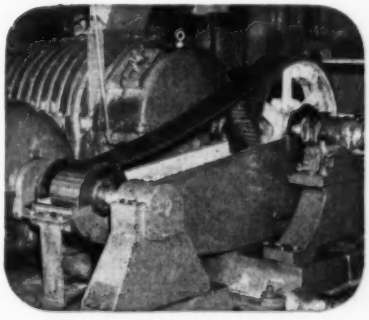
HIGH SPEED. Link-Belt silent chain drives often operate at speeds of 4000 to 5000 feet per minute.



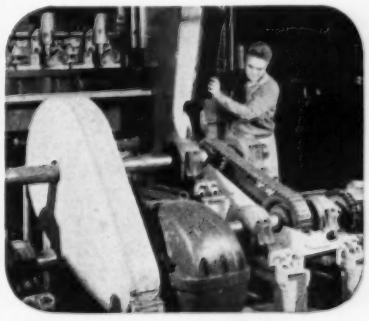
REVERSE ROTATION OF SHAFTS. Link-Belt duplex silent chain — capable of driving from either side of chain — operates multiple shafts on this uptwister. On fixed center drives, proper chain tension is maintained with an adjuster.



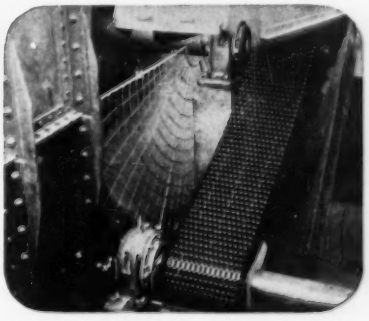
ADVERSE OPERATING CONDITIONS. Effects of heat, humidity and cold are minimized with Link-Belt silent chain drives.



LARGE RATIOS. Link-Belt silent chain operates efficiently at ratios as high as 10-to-1, with resulting space economies.



LIMITED SPACE. Easy to assemble in close quarters, Link-Belt silent chain permits built-in drives, compact housings.



LONG LIFE. Link-Belt silent chain has given more than 30 years of uninterrupted service on ventilating systems.

Ask your Link-Belt office or authorized stock-carrying distributor for

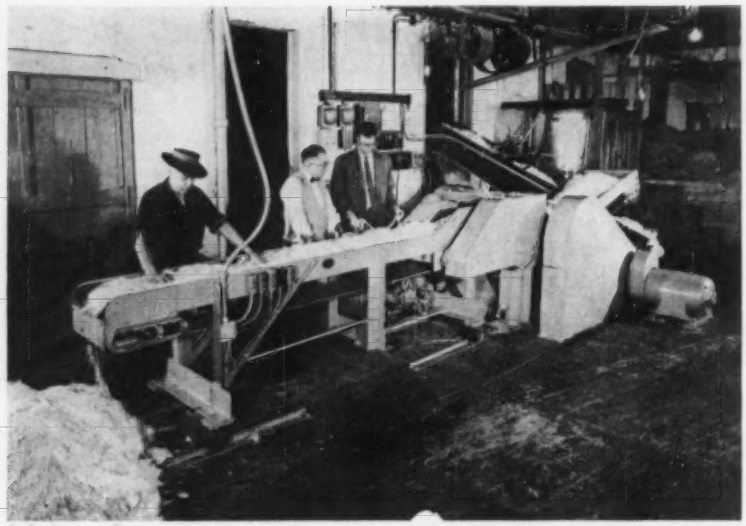
88-page Book 2425

LINK-BELT

SILVERSTREAK SILENT CHAIN DRIVES

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 14,815

For more data, circle A-9 on Reader Service Card



IMPROVED THREAD WASTE CUTTER

"Solves all our cutting problems"

says Frank P. Mita & Co.

This new Taylor-Stiles Cutter will solve your synthetic and natural thread waste cutting problems, too, just as it has for Frank P. Mita and Company, well known garnetters of Philadelphia.

Says Mr. Alfred Mita, production head of Frank P. Mita and Company: "Cutting is an important part in our quality garnetting of fibres for woolen carding and spinning. With our new Taylor-Stiles cutter we can get any length cut we desire, from ¾" to 5".

"We readily cut Polyamide, Acrylic, Polyester, Cellulose, and other man-made and natural yarn wastes.

"We can feed more uniformly, and find the cutter free from factors that might cause jamming."

"The yarn waste is cut at rates of a half to one ton an hour, without pushing the machine at all."

Scores of other garnetters and textile mills have found, as has Frank P. Mita and Company, that Taylor-Stiles thread waste cutters solve their cutting problems, too.

Why have difficulty in cutting the new synthetic fibres or old ones? Why have interruptions of production due to jamming? Why suffer low production rates? Why experience difficulty in getting the length cut you want, or in changing it instantly when necessary?

Avoid these problems by replacing your old, less efficient cutters with the new Taylor-Stiles cutters. Improve your cutting operations, sharply reduce downtime and maintenance costs.

Get all the facts. Write today for our four-page technical bulletin #201 with full details of Taylor-Stiles Improved Thread Waste Cutters. No obligation.

TAYLOR, STILES & CO.

15 BRIDGE STREET RIEGELSVILLE, NEW JERSEY

gest a 50-50 mix with card strips from 1-in. cotton.

For coarse yarns of 1s to 2s, a 10x5 long-draft slubber is suitable. A spindle speed of 950 to 1,000 rpm. with 5 to 7 TM. should be used. For yarns up to 10s, a 7- or 8-in. roving frame with a spindle speed of 1,300 rpm. will give good results with 5 TM. Use slubber roving in the creel of the fine frame.

Keep roving drafts on the fine side. Two-process drawing will give the best results. A wide-gauge spinning frame might be better for the coarser yarns.

The tendency of these fibers to ball up in processing might be a greater problem than the short fibers. These fibers might have greater value in making felt or as a filler in the fulling process.

Quilled Filling Pays Off In Cost Savings and Quality

Technical Editor:

Our mill for many years has successfully spun filling, but we are now thinking of putting in quillers. What are some of the advantages of quilled filling? (1431)

Based on actual experience, most mills find that quilled filling is superior to spun filling in cost, quality, seconds, and the amount of yarn put on the bobbin.

Burling cost may be reduced 25%; and 15 to 40% more yarn can be put on bobbins. Some mills report 50% fewer slubs and gouts. The cost saving in doffing and battery filling may well offset the quilling cost.

Defects at Tufting Machine Are Caused by Dull Knives

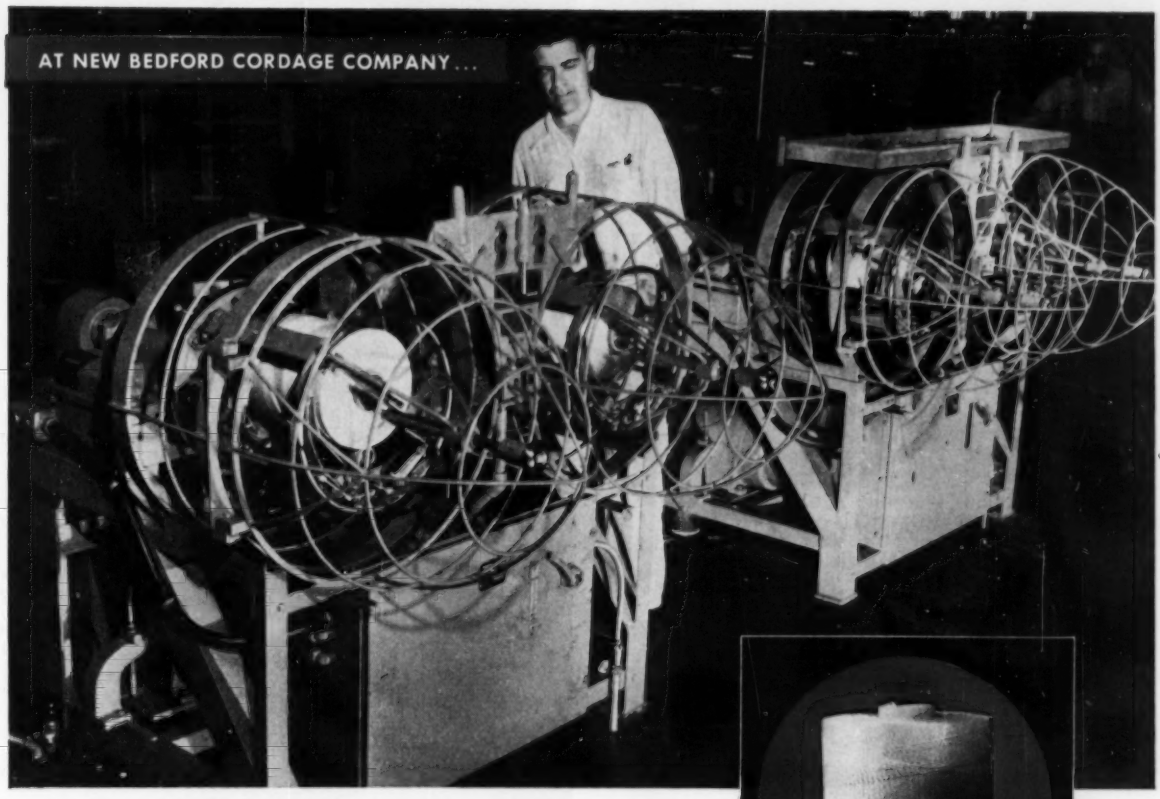
Technical Editor:

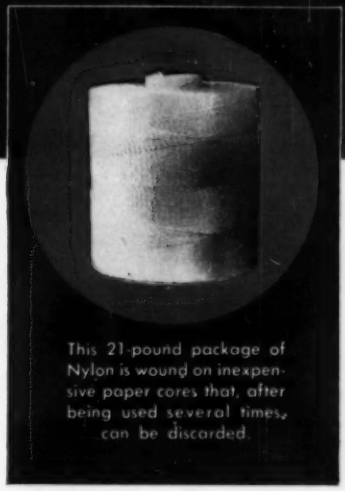
We recently started producing tufted carpets from textured nylon. End breakage and fabric streaks caused by hanging fiber loops at tufting machines bother us. How can we eliminate these defects? (1438)

To prevent these defects, you might try changing your copper creel tubing to plastic tubing with an outside diameter of ⅜ in. Some mills that have had this same trouble sharpen their looper knives more frequently, at least twice as often as normal, since nylon is a tough fiber that quickly dulls any cutting edge.

If these suggestions don't help, try checking processes back of the tufting machine to see if there's some fault in the yarn or fiber.

CONTINUED ON PAGE 183





This 21-pound package of Nylon is wound on inexpensive paper cores that, after being used several times, can be discarded.

Warner & Swasey
Whirlwind Twister Winders

- INCREASE YARN PRODUCTION 3 TO 1
- SHOW 50% LABOR SAVINGS
- CUT MAINTENANCE COSTS 25%

These versatile Twister Winders have truly helped to revolutionize synthetic (Nylon, Dacron and Polyethylene) rope making for New Bedford Cordage.

They can easily wind 21-pound, knot-free packages as compared to 8½-pound conventional packages—a size increase of 250%! Problems of package care are now non-existent—they can use cheap paper cores which are later discarded.

Due to the larger packages created by the increased doff cycle, both downtime and running tension have been reduced. Also, product quality has improved noticeably. It is stronger and more uniform.

New Bedford's Twister Winders—one of the most radical production equipment changes to come about during the last 25 years—will pay themselves off in only 3½ years' production of yarns for 1/16-inch twine to 3¼-inch finished rope.

To get the complete Twister Winder story on cutting costs, speeding production and improving product quality in your own mill, call in the Warner & Swasey Field Representative today.

SALES OFFICES

Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio
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121 11th Street, N. E., Atlanta 3, Ga.
P. O. Box 4000, 624 Pecan Avenue, Charlotte 4, N. C.
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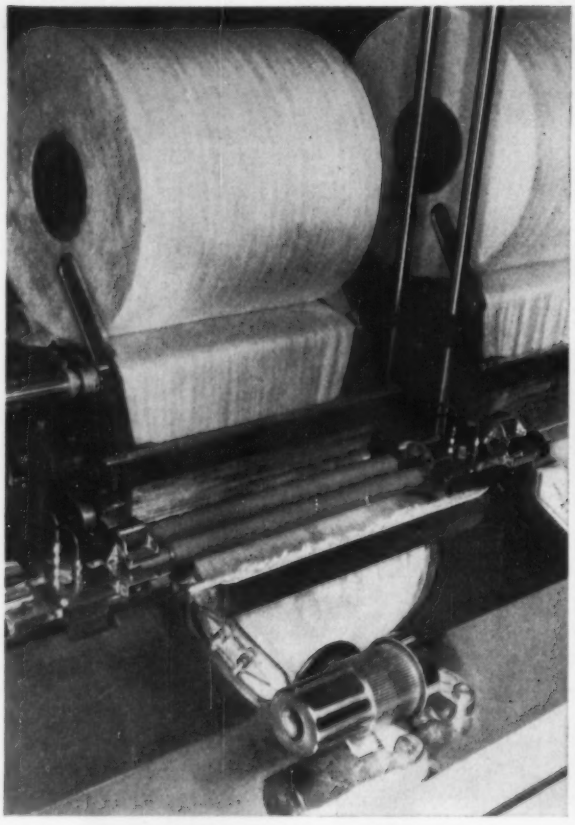
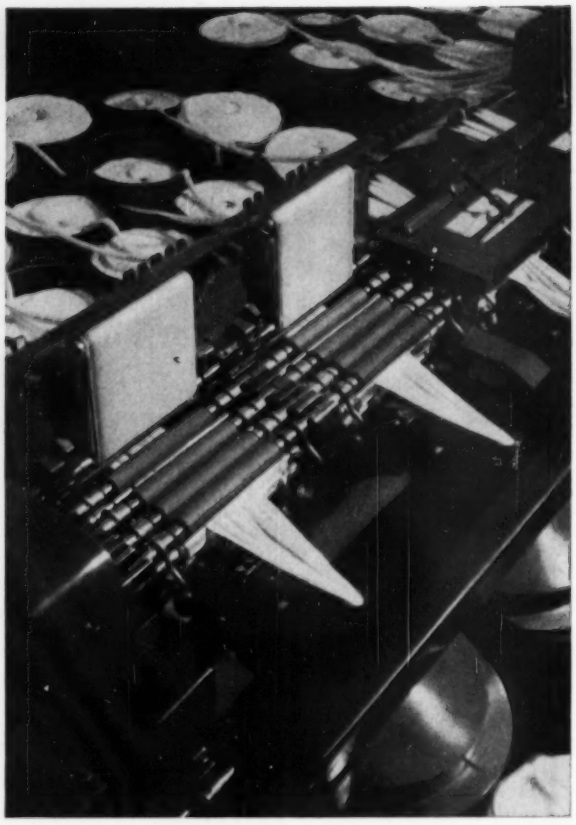
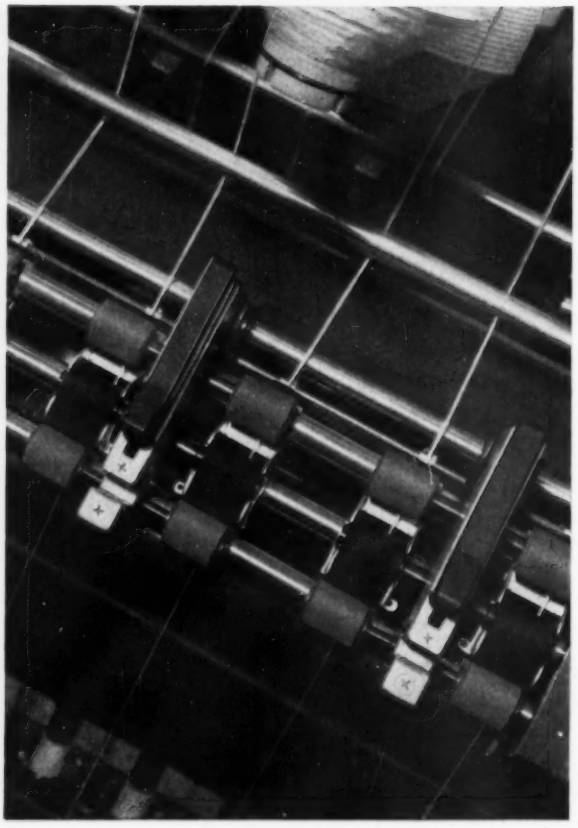
WARNER & SWASEY
TEXTILE MACHINERY DIVISION

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS... WITH A WARNER & SWASEY

For more data, circle A-11 on Reader Service Card







How the right roll covers will help you produce better work from comber to spinning frame

Although your card room and spinning room frames do different jobs, the quality of their work largely depends on the performance of their drafting roll covers . . . and this performance, in turn, requires the careful selection of the right material for each job.

The Accotex line of roll covers simplifies this selection problem, because it includes materials compounded to meet the special requirements of each frame in the yarn preparation and spinning processes.

On combers, for example, Accotex NO-763 Covers are used on detaching rolls. NO-763 is an anti-static material that maintains good control of the web and reduces lap-ups to a minimum. In the comber draw box, rolls covered with Accotex J-490 help to draft uniform sliver.

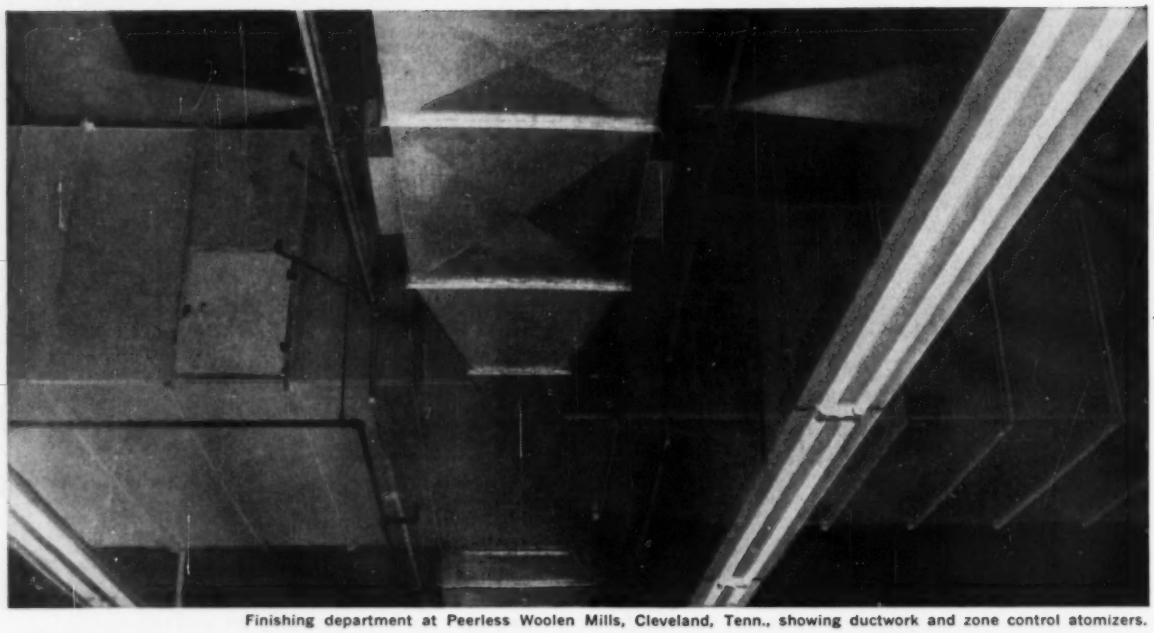
For drawing frames, there is a choice of Accotex Covers that will give smooth operation. Where flat clearers are used, Accotex NC-762—another anti-static material—will minimize eyebrowing. For drawing frames with revolving clearers, either J-490 or NO-764 will help to eliminate lapping.

On roving frames equipped with revolving clearers, either Accotex NO-764 or J-490 will control lapping. These two covers tend to repel loose ends, and fibers will not build up on their smooth surface. Where flat clearers are used, NC-762 Covers are recommended. These anti-static covers help to prevent the formation of eyebrows and keep waste formation to a minimum.

In the spinning room, there's an Accotex Cot available that will give you high production of quality yarn no matter what type frame you have, and no matter what kind of fiber you're spinning. Where front roll laps are a problem, they can be controlled by using either J-490 or NO-764. Excessive eyebrowing can be virtually eliminated with NC-762, a new anti-static material. On some frames, an improved break-factor can be obtained by using one of the softer Accotex Cots such as NO-728 or NO-768.

Selecting the right cover for each step in yarn production can make a big difference in the quality—and the quantity—of your production. Your Armstrong representative will gladly help you make the right roll cover selections in your mill. Next time he calls, ask him to make a survey of *all* your roll covering requirements. Armstrong Cork Company, Industrial Division, 6603 Dauphin St., Lancaster, Pennsylvania.

Armstrong ACCOTEX ROLL COVERINGS



Finishing department at Peerless Woolen Mills, Cleveland, Tenn., showing ductwork and zone control atomizers.

PEERLESS WOOLEN MILLS

chose Amco Air Conditioning at its Cleveland Tenn. Plant to be

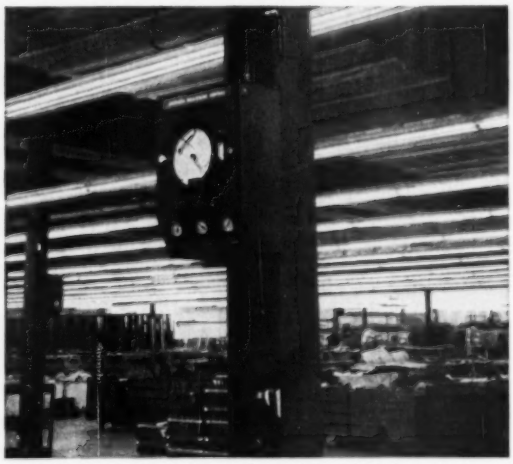
INDEPENDENT OF OUTSIDE WEATHER

An Amco dual (split) system has given Peerless Woolen Mills exactly what was wanted... tailor-made *inside air* regardless of *outside weather!*

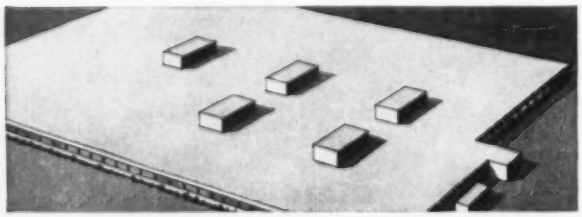
Amco Central Station Air Conditioning, augmented by room atomizers, permits each of the different manufacturing areas in this 10-acre building to be controlled separately.

Peerless spared nothing to assure this *profitable precision control* of temperature and humidity. Over 1000 tons of refrigeration capacity and 3 miles of ductwork were provided. Five of industry's largest commercial fans were installed.

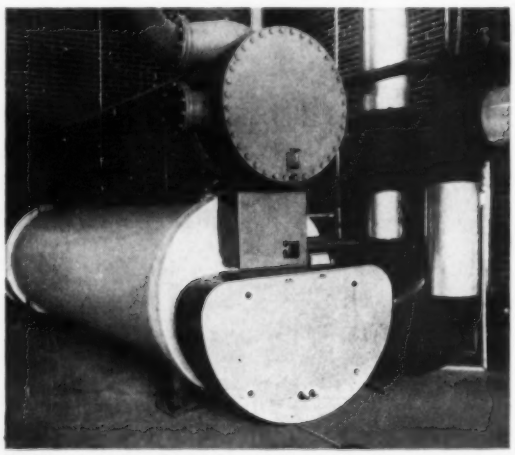
If you have a textile mill conditioning problem, ask an Amco engineer to call. There's no obligation.



Amco Aspirating Cabinet controls condition of air in weave room. Air temperature and humidity register on recorder chart.



On top of mill building are 5 apparatus rooms, each housing fan, air washer, filter, and chilled water tank.



1000-ton capacity refrigeration machine is used for temperature control the year-round. Condenser is at top; chiller at bottom.

AMERICAN MOISTENING COMPANY

Makers of Air Conditioning Systems and Textile Mill Equipment Since 1888

Home office and plant: Cleveland, N.C. Branches in Atlanta, Providence, Toronto.

For more data, circle A-13 on Reader Service Card

For more data, circle A-14 on Reader Service Card →

2 NEW REEDS

from Stehedco

FOR BETTER QUALITY plus Economy

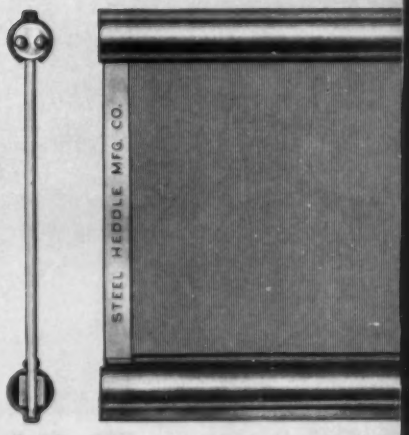
STEHEDCO COMBINATION REED—Get the combined advantages of pitch band and all metal construction in one reed at very low cost. The top pitch band rib gives dent flexibility for easy entering. The bottom all metal construction presents a more rigid and better spaced reed to the cloth at the beat-up position. To provide maximum strength and rigidity the top rib is armored same as the armored reed described below.

STEHEDCO ARMORED REED—This is a super pitch band reed with metal tubes locked in place around the ribs by an exclusive process that assures maximum rigidity. Two of the many advantages found in the Stehedco Armored Reed are the drastic increase in strength with no increase in price over the conventional pitch band reed, and the elimination of lame spots in the reed caused by worn or damaged lay slots or reed caps.

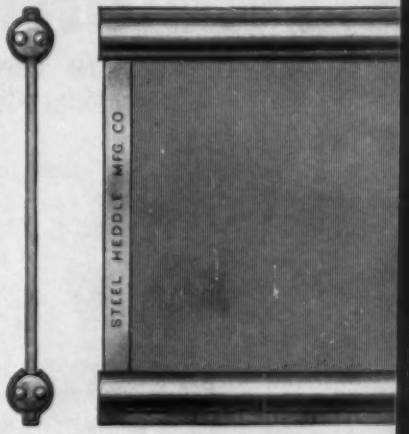
RIGIDENT WIRE—a new dent shape as illustrated in enlarged view. Provides greater strength and rigidity, and also gives more air space at the edges for knot entry and easier beat-up.

Ask one of our Sales Engineers to show you how you can profit by these new Stehedco developments.

COMBINATION REED



ARMORED REED



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STEEL HEDDLE MFG. CO.
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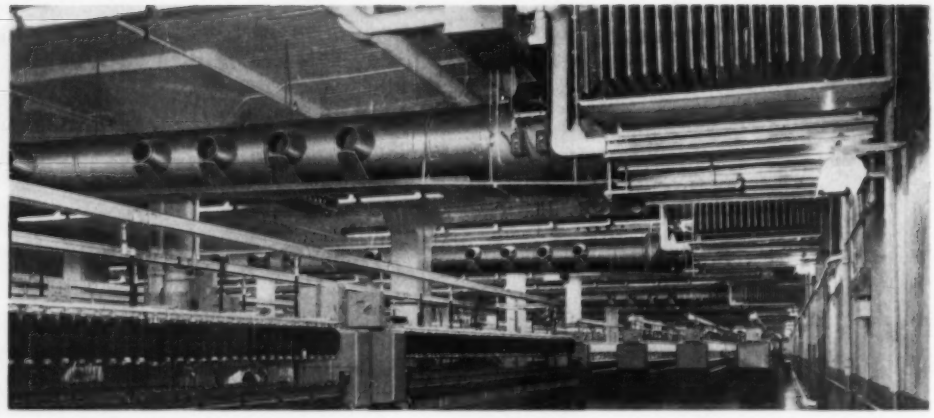
DAN RIVER'S 1st CHOICE 5 TIMES

Says BASIL D. BROWDER
Executive Vice-President
Dan River Mills, Danville, Va.



BAHNSON HUMIDUCTS

WITH REFRIGERATION AND EASY-FLO FILTERS PROVIDE FLEXIBLE UNIT-SYSTEM AIR CONDITIONING AT LOW COST

Free Illustrated Bulletins
For full details write for Humiduct Bulletin 4A, Easy-Flo Bulletin 27A.

"Five times in our decade of modernization," says Mr. Basil D. Browder, "we chose Bahnson Humiducts for Spinning and Weave Rooms at Dan River. Humiduct's versatile unit design gives us control flexibility for production requirements . . . Easy-Flo Filters provide clean air, reduce cleaning time . . . overtime maintenance is eliminated with Humiducts. We found that Humiduct's low first cost and efficient operation gave us the most modern and economical air conditioning for our needs."

Bahnson AIR-O-MATION
AIR AT WORK FOR INCREASED PROFITS

THE BAHNSON COMPANY
WINSTON-SALEM, N.C., U.S.A.

For more data, circle A-15 on Reader Service Card
For more data, circle A-16 on Reader Service Card→

At this mill 30,000 spindles run clean and free with Gulfspin...

GULF MAKES THINGS RUN BETTER!

Ask the people who operate the Amerotron Company's throwing plant in Williamston, South Carolina, whether Gulf makes things run better. They can show you 30,000 spindles running clean and free on Gulfspin, 7 days a week, and often at speeds exceeding 16,000 rpm.

"Under these conditions, our operating costs would be astronomical if our lubrication wasn't up to scratch," says an Amerotron executive. "With an inferior oil, the high speeds, heat and wear would tend to build up sludge and gum residues on spindles, bolsters and in spindle bases. We avoid all that by using Gulfspin—which has been our spindle lubricant for over 5 years."

In addition, Gulfspin helps Amerotron cut their costs by keeping the spindles running free—without waste of electrical power.

Gulfspin can save *you* money, too. It's oxidation stabilized to resist sludge formation. It prevents contaminants from depositing in spindle bases. It provides effective protection against rust. And, it does not increase in viscosity even after many months of service. For more information, call your nearest Gulf office.

GULF OIL CORPORATION • Dept. DM, Gulf Building • Pittsburgh 30, Pennsylvania

GULF

Automate your cotton *looms by "weaving-from-a-cone"*
with **UNIFIL**® *Loom Winders...*

You can weave higher quality cotton fabrics at lower cost per yard, by installing UNIFIL Loom Winders.

The UNIFIL Winder brings the entire process of filling preparation right to the loom. It automatically winds, loads the shuttle, strips and returns empty quills to the winder. Tension variation is held to a minimum . . . quill soilage and mixed fillings are virtually impossible! Savings in quill handling alone quickly pay for UNIFIL. And cloth quality is *automatically* better on every yard you run, because of better prepared filling and improved transfer conditions. Thousands of UNIFIL Winders are daily improving the weaving of filament and spun fabrics, as well as cotton.

Find out how UNIFIL Loom Winders can improve cotton weaving and profits in *your* mill. Ask your Universal Sales Engineer, or write Universal Winding Company, P. O. Box 1605, Providence 1, Rhode Island.

23.8.6

LEESONA

UNIVERSAL WINDING COMPANY

Boston • Philadelphia • Charlotte • Atlanta • Los Angeles • Montreal and Hamilton, Canada

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For more data, circle A-18 on Reader Service Card

IT'S A MATTER OF

pulling together!

GOODYEAR

And here's how Green Seal V-Belts by Goodyear make pulling together pay—and pay—

On every type of drive—in every part of America—Green Seal by Goodyear are and outlast anything

—AT AN OHIO CHEMICAL PLANT

Operation: Pulverizing nickel formate

Drive: Main drive on micro-atomizer—handles 20 h.p. at 5,868 f.p.m.

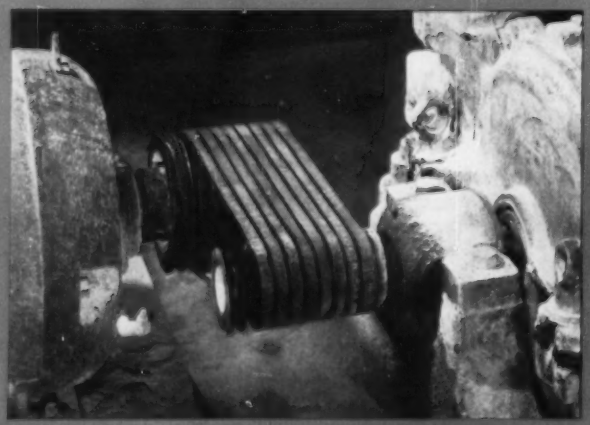
Service: *Eight matched V-Belts with the Green Seal served for more than 6 months compared with 4-week life for 10 belts of another make.*

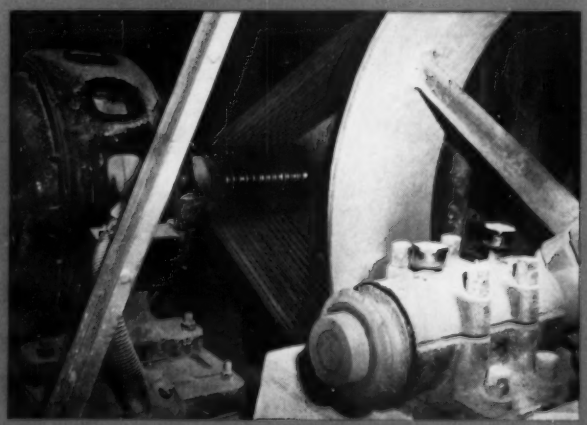
—IN A MISSOURI PIPE PLANT

Operation: Making fire clay and sewer pipes

Drive: 125 h.p. ball-mill drive

Service: *Fourteen matched V-Belts with Green Seal construction served 6 years without maintenance of any kind.*





every kind of industry—in matched V-belts with the pulling together to outperform else belt-users can buy—

—ON A TEXAS OIL RIG

Operation: Drilling oil wells

Drive: Main drive on mud pump

Service: *20 V-Belts with the Green Seal pulled together to drill 202,790 feet of hole—more than 25% better than the average belt-life in this service.*

—AT A SOUTH CAROLINA FABRIC MILL

Operation: "Soaping" screen-printed fabrics

Drive: 50 h.p. "soaping" range drive with belt speed of 1,413 f.p.m.

Service: *Ten matched V-Belts with Green Seal construction served 8 years with virtually no time out.*

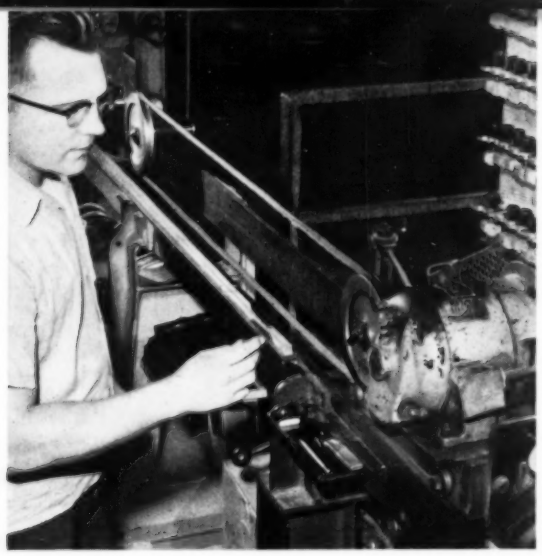
Here's why

V-BELTS

with the

Green Seal

always pull together



The secret's their unequalled dimensional stability. And it's built into each belt via special tension members of steel cable or exclusive, synthetic Triple-Tempered (3-T) Cord. Then every set is precision-measured – several times over – to make sure they are perfect teammates.

That means matched sets really match. Every belt does its part of the job. There are no "loafers" to put extra strain on the other belts. No belt ever overworks and causes a premature failure. It's strictly a matter of *pulling together* – whether your drive calls for two or fifty belts.

What's more, every V-Belt with the Green Seal is designed to outperform all others. High in modulus, they're low in stretch to minimize take-up. They're friction-balanced – so covers don't stick or grab in the grooves. They're non-dusting, too.

In short, these are the belts that give you maximum, trouble-free hours at minimum cost. You need belts like these to pull together on your drives–large and small.

Just contact your Goodyear Distributor–or fill out the handy coupon below.

Green Seal–T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

DIMENSIONALLY STABLE V-BELTS WITH THE GREEN SEAL BY

GOODYEAR

THE GREATEST NAME IN RUBBER

S-51162

THE GOODYEAR TIRE & RUBBER COMPANY, Industrial Products Division, Dept. 794, Akron 16, Ohio

Please send me more information about how V-Belts with the Green Seal solve the major problem in belting multiple V-Belt drives.

Name .....

Company .....

Street Address ..... City ..... Zone ..... State .....

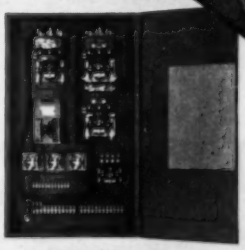
The only machine in the world making NON-WOVEN FABRICS that:

EXCLUSIVE 1 Produces uniformly thick webs to the very edge . . . full 84 inches.

EXCLUSIVE 2 Uses natural or synthetic fibers from ¼" to 2" with weights from ½ oz. to 20 oz. per sq. yard.

EXCLUSIVE 3 Delivers high production with low maintenance.

NEW, IMPROVED 84" RANDO-FEEDER® AND RANDO-WEBBER®



1. **ELECTRICAL CONTROL PANEL** May be used in centralized electrical distribution system
2. **LARGE DOORS EACH SIDE** Easy access for servicing
3. **ACCESSIBLE CONTROLS** For all phases of machine operation
4. **SIDE DOOR TO FEEDER**
5. **DUAL AIR VALVES** Controls for delivering uniform fiber distribution with indicating suction gauges 5A
6. **FULLY GUARDED**
7. **FEEDER ON ROLLER BEARING WHEELS AND RAILS** For easy separation of units
8. **TOP DUCT COVER** Clear Plexiglas window . . . a lightweight window for observing web formation
9. **FINGER TIP ADJUSTMENT OF TOP DUCT COVER** For passage of any thickness of RANDO-WEB®
10. **REMOVABLE PANEL** For easy access to fans

PLUS BUILT-IN HUMIDIFICATION SYSTEM, IMPROVED FEED ROLL AND FEED PLATE ASSEMBLY for automatic threading of feed mat.

TEXTILE DIVISION
CURLATOR®
CORPORATION
EAST ROCHESTER, NEW YORK

WRITE for bulletin giving more detailed information on fibers used, webs made, end products.

EXPORT REPRESENTATIVE: Lendt & Company, 535 Fifth Ave., New York 17, N.Y.
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For more data, circle A-19 on Reader Service Card

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simple? no!

as complex as life itself

At Clinton we learn new things about corn almost every day.

Corn is sustenance and shelter. It is clothing and confections—bread and beer. Corn is life—but only with the help of man. Its seed left in the field will wither and rot—but planted and cultivated by man it will drive roots three feet into the ground and stalks as high as fifteen feet into the air. It will thrive and create the raw materials for the well-being of man.

Clinton serves the TEXTILE industry

Clinton's uniformly controlled, quality products will meet your textile manufacturing requirements. Consult your Clinton salesman. He will provide product information, arrange for prompt technical service, or assist you in any way possible.

CLINTON CORN PROCESSING COMPANY
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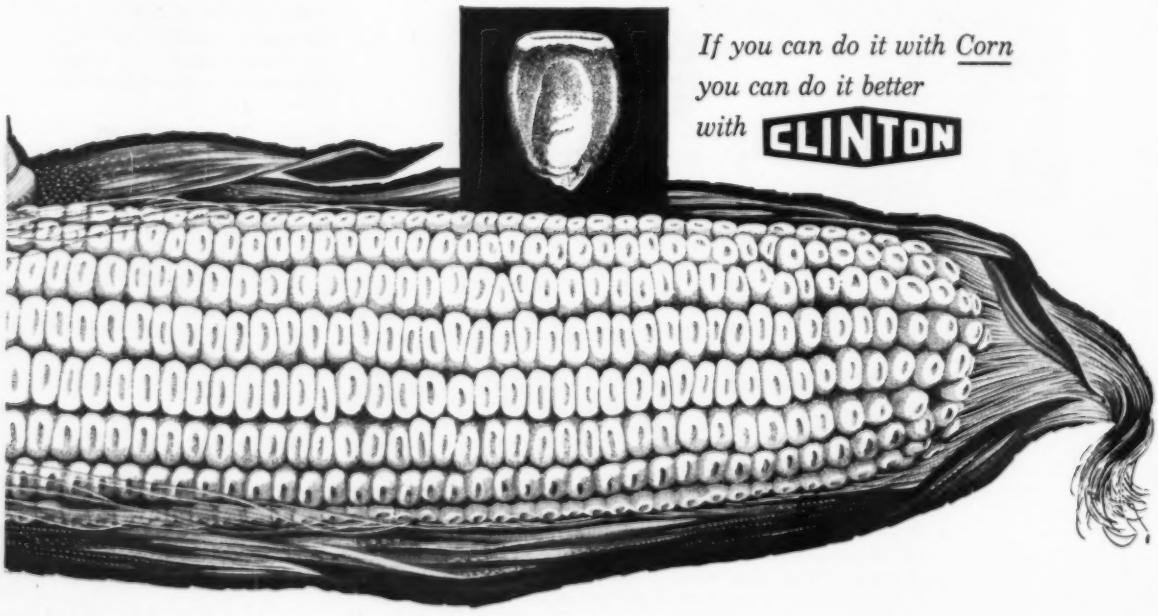
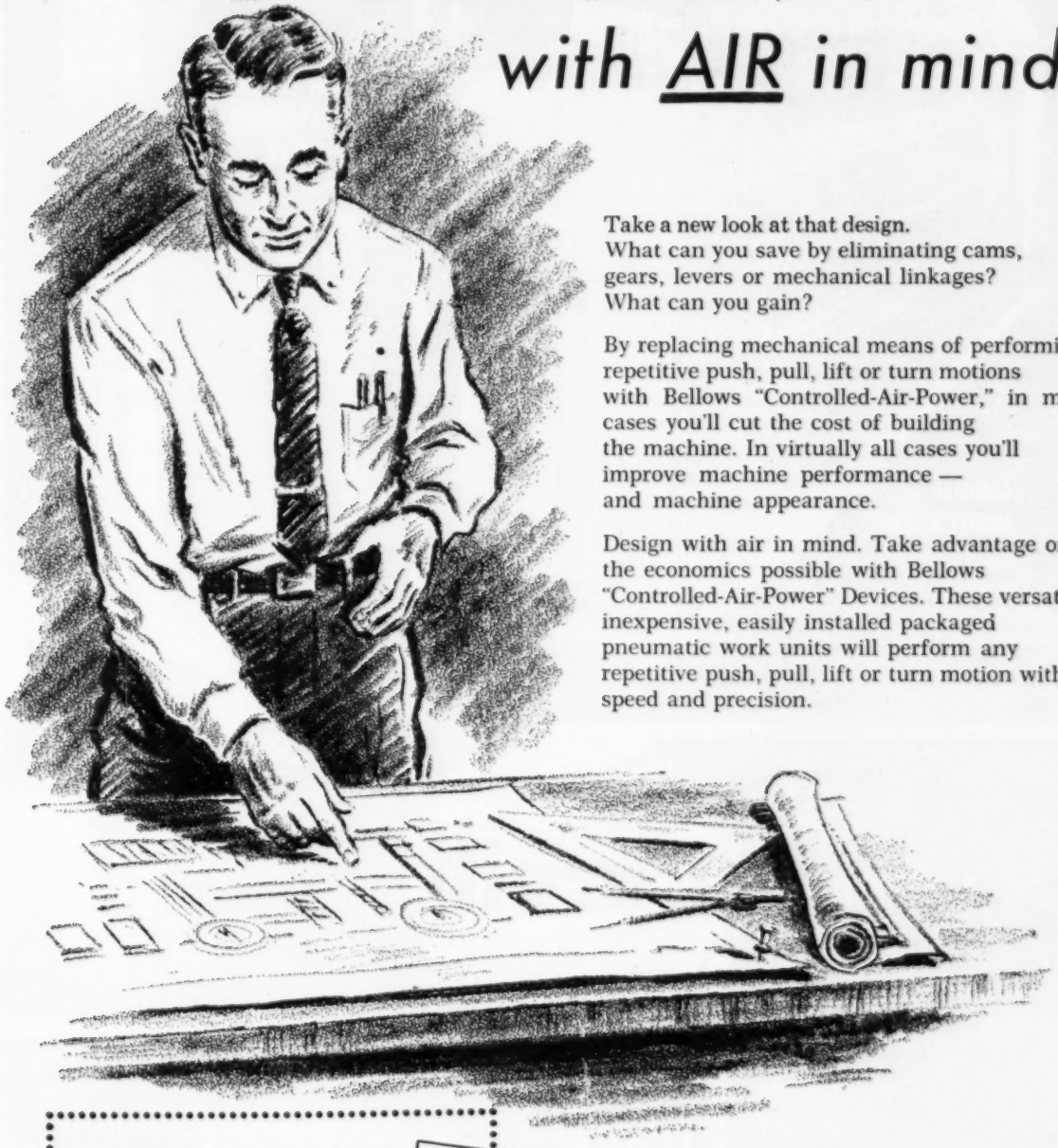
CORN SYRUPS • DEXTROSE • STARCHES • DEXTRINS
SUGARS • OILS • LACTIC ACID
AND OTHER PRODUCTS FROM CORN



If you can do it with Corn
you can do it better
with CLINTON

DESIGN

with AIR in mind



Take a new look at that design.
What can you save by eliminating cams, gears, levers or mechanical linkages?
What can you gain?

By replacing mechanical means of performing repetitive push, pull, lift or turn motions with Bellows "Controlled-Air-Power," in most cases you'll cut the cost of building the machine. In virtually all cases you'll improve machine performance — and machine appearance.

Design with air in mind. Take advantage of the economics possible with Bellows "Controlled-Air-Power" Devices. These versatile, inexpensive, easily installed packaged pneumatic work units will perform any repetitive push, pull, lift or turn motion with speed and precision.

READ THIS STORY—

"The Place of the Bellows Air Motor in Original Equipment Design."

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893-B

CARNITI
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Spinning frame for worsted, synthetic and blended yarns

CARNITI
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For speeds up to
15,000 R.P.M.
Operates
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8 million spindles
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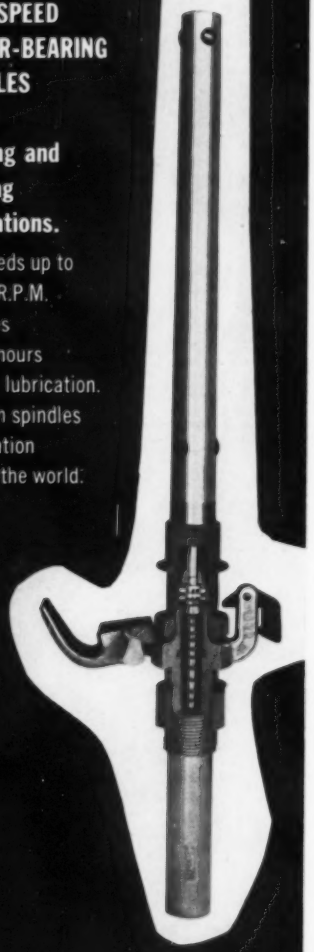

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Manufacturers of preparatory, spinning and twisting machinery for Cotton, Woolen, and Synthetics.
35 years' experience in Textile Equipment Engineering.

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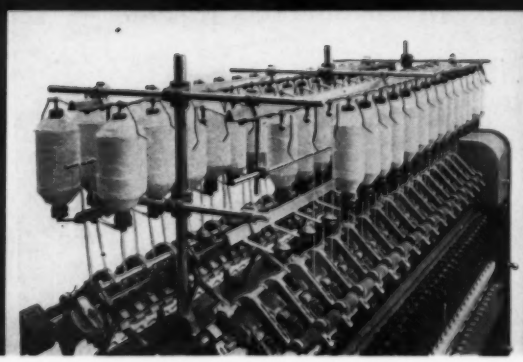

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ball bottom holder
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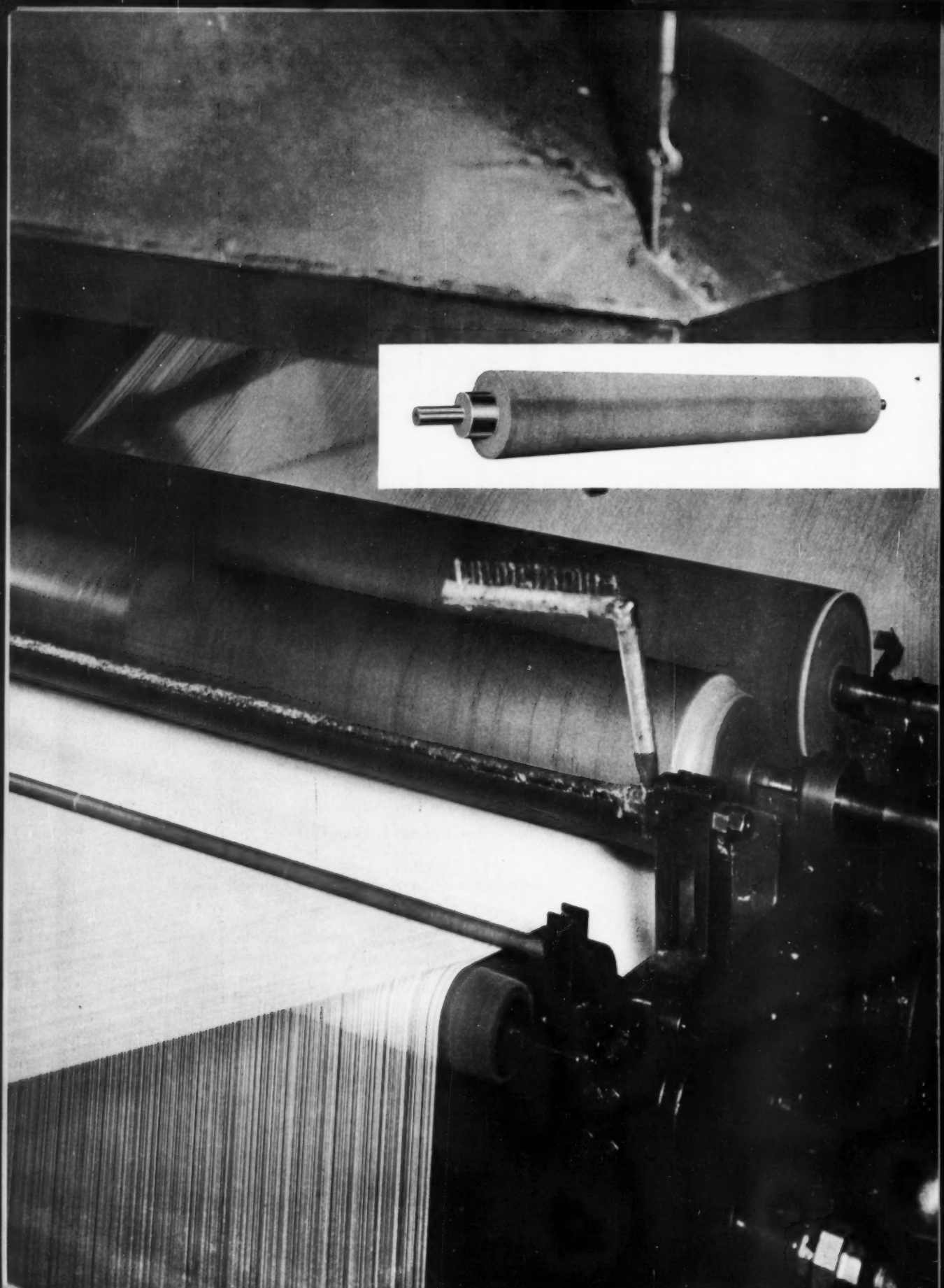


RUN PERFECT

Warps at Lower Cost

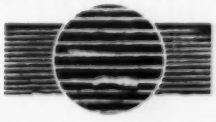
with Dayco Thoro-size Slasher Rolls

EFFICIENT SIZING is automatic with Dayco Thoro-size Slasher Rolls. Their perfectly resilient surface insures accurate, consistent metering of just the right amount of starch for smooth, clean sizing. There's no waste, for the excess is squeegeed back into the tank for re-use.

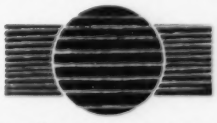
TROUBLE-FREE OPERATION gives you up to 45% greater production. Time-saving Dayco Slasher Rolls have no cover or blankets to change or become hard . . . never need warming up . . . stay in place while you're changing sets.

PAID FOR IN 6 MONTHS, through savings in time and materials, Dayco Thoro-size Slasher Rolls can be reground after a year or more of service to restore their like-new condition. This economy feature, plus the fact that they are unaffected by oils or chemicals, adds years to the life of your Dayco Rolls.

LOOK! NO LAP MARKS or flattened yarn, all due to the seamless construction of Dayco Thoro-size Slasher Rolls. The result is a flawless surface free of streaks and spots. Make your own comparison from the samples shown.



Irregular sizing denotes inadequate control of ordinary slasher rolls



Clean, uniform sizing proves superior performance of Dayco slasher rolls

Get the full story on how you can save time and money while improving your slashing quality. Ask the Dayton Representative next time he calls or write The Dayton Rubber Company, 401 S. C. Nat'l Bank Bldg., Greenville, S. C.

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Dayco and Thorobred Textile Products for Better Spinning and Weaving.

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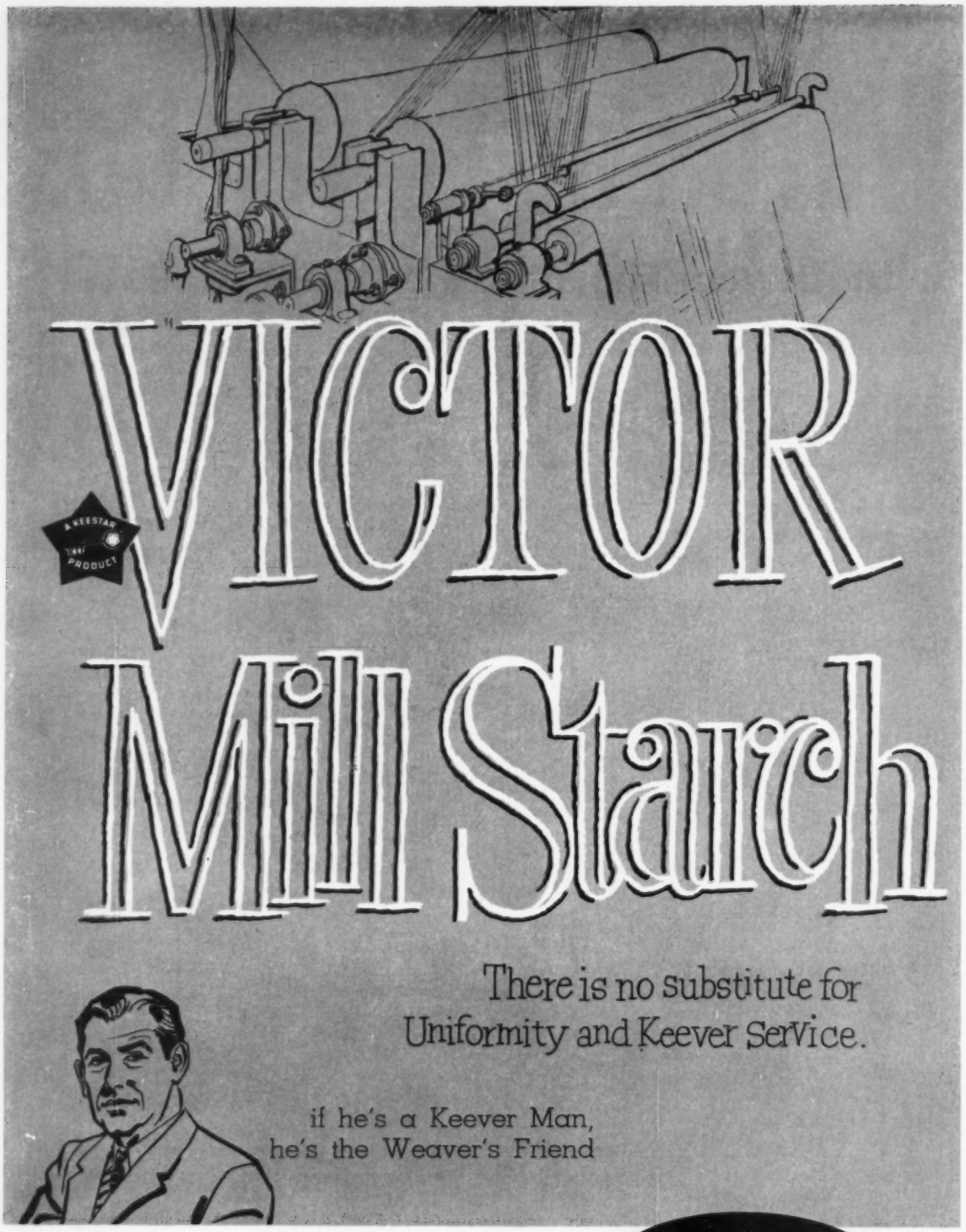

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118 SOUTH PLEASANTBURG DRIVE
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In this **Split Wedge Gate**

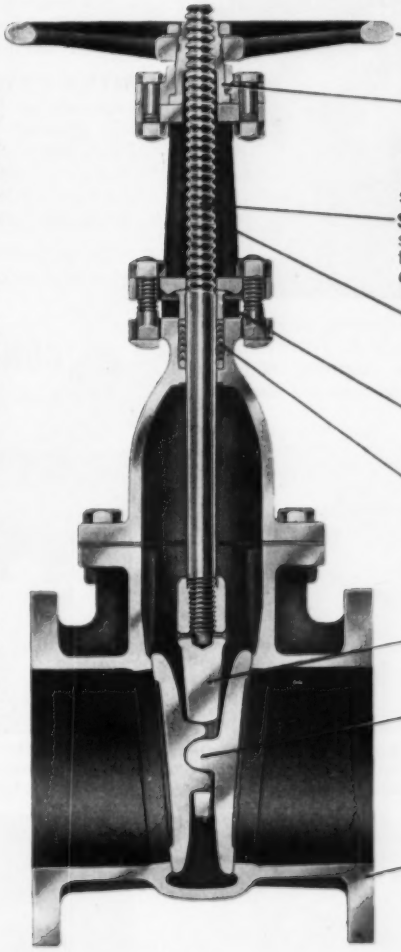
you can see why it pays to

Specify JENKINS for STAINLESS STEEL Valves, too

This picture shows the many points of excellence in the design and construction of Jenkins Fig. 1327 Split Wedge Stainless Steel Gate Valves. Compare them with any valve you know. You'll conclude that it's hard to beat Jenkins at making valves, no matter what the material.

But no picture can show the quality of the castings . . . the precision machining . . . the rigid inspection and testing that have gone into this valve. All of these are as important as design and metal alloys in assuring long, dependable, economical valve service. And, all of them are up to the peak standards for which Jenkins has been known for almost a century.

SEND FOR NEW CATALOG of Jenkins Stainless Steel Valves. You'll find in it the patterns you want, in a choice of alloys that satisfy the requirements of practically all corrosive services. Also, you'll see that these Jenkins valves meet valve industry specifications and the high standards established by the leading users of stainless steel valves. Jenkins Bros., 100 Park Avenue, New York 17.



WHEEL of high strength malleable iron designed for firm grip and easy operation.

YOKE BUSHING, easily renewable. Made of bronze, for ideal thread engagement with stainless steel spindle, to prevent seizing or galling of spindle threads. Bushing of stainless steel is optional.

SPINDLE has long thread bearing surfaces with correct lead for easy, tight closing. Screws into wedge carrier, then secured by a stainless steel pin.

YOKE BONNET has liberal space between yoke arms for easy access to packing box. Precision machined flange face assures uniform contact with gasket for a tight body-bonnet joint.

GLAND consists of two pieces — gland flange and gland follower — eliminates binding of follower in case gland bolts are tightened unevenly.

PACKING of Chevron-type Teflon in large packing box prevents leakage. Only a minimum load is required on gland, extending service life of packing.

WEDGE CARRIER connects wedge to spindle and raises or lowers it. Husky in size to stand any operating strains.

SPLIT WEDGE is the ball-and-socket design which automatically adjusts to the tapered seating surfaces for positive shutoff. The discs, revolving freely in the wedge carrier, produce a self-cleaning action on seating surfaces and reduce possibility of galling and seizing.

BODY —Through-port design for full, free flow. Ample wall thickness and good design provide extra strength to withstand stresses. End flanges conform to M.S.S. specs.

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LOOK FOR THE JENKINS DIAMOND
VALVES

Sold Through Leading Distributors Everywhere

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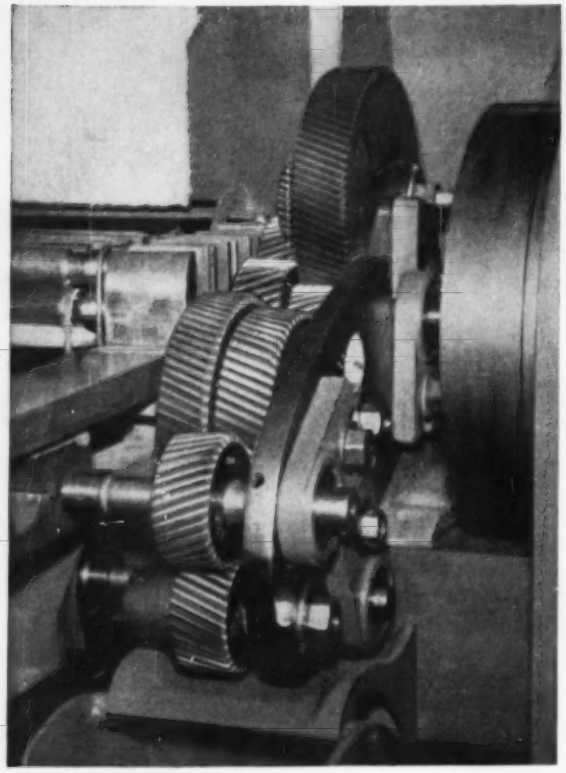
Put strength, long life, silence into gears, couplings, loom parts with C D F Celoron® plastic



CELORON-TO-CELORON GEARS in drawing rolls made by Ideal Industries, Inc., Bessemer City, N. C. These are helical-cut gears—the toughest to machine, requiring the toughest material. Celoron is it. Other Celoron parts for this application are shown below, top right.

WORK MIRACLES IN TEXTILE MACHINERY—with this amazing golden plastic material! Celoron gears help eliminate noise, reduce wear on mating metal gears; and even the roughest-used helicals last . . . and last . . . and last.

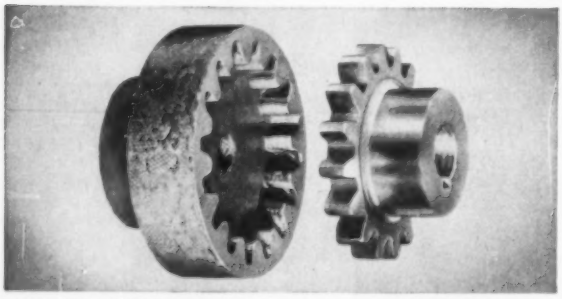
HIGH MECHANICAL STRENGTH. Typical Celoron strengths: tensile, 6,500 psi; flexural, 10,000 psi; compressive, 25,000 psi; shear, 8,500 psi. Dimensionally stable and readily machined, Celoron fills the bill where costly metal parts fail.

ELECTRICAL INSULATION VALUE. Celoron is a non-conductor with high electrical insulation value. It makes ideal mechanical-electrical parts. Celoron couplings effectively insulate motors from driven machinery.

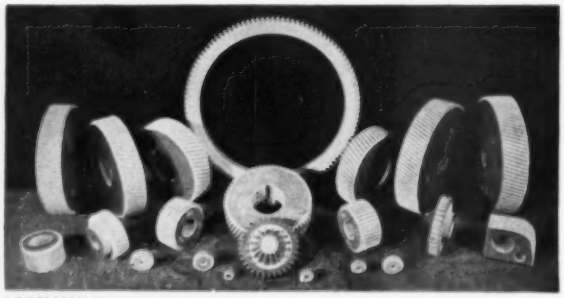
BETTER SERVICE FOR THE SOUTH. Besides having sales engineers in all principal cities, C-D-F maintains a specialized plant-warehouse stocking Celoron parts and Diamond Fibre receptacles for the Southern textile industries at 834 Hayne St., Spartanburg, S. C. Your Celoron gear blank, coupling, or loom part will reach you fast from this wide-awake distribution center.

Keep in close touch with *your* C-D-F sales engineer—a good man to know!

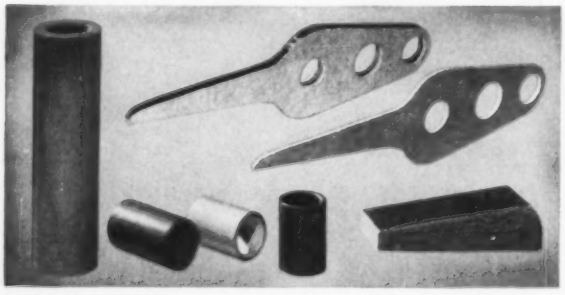
CONTINENTAL-DIAMOND FIBRE
A SUBSIDIARY OF THE Bakelite COMPANY • NEWARK 55, DEL.



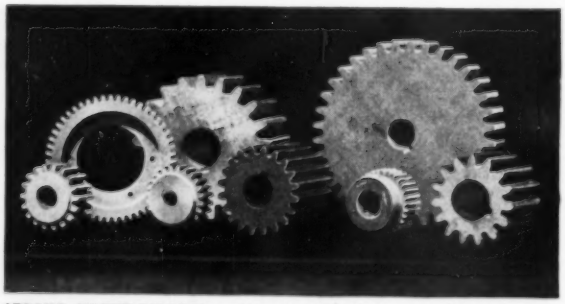
LOW-COST, EASILY-ASSEMBLED C-D-F Celoron flexible coupling transmits power smoothly, efficiently, silently . . . needs no lubrication, works on vertical or horizontal shafts.



PRECISELY MACHINED KEYWAYS help keep these Celoron parts silent and strong in the Ideal drawing rolls illustrated in top photograph. Note wide range of sizes and shapes.



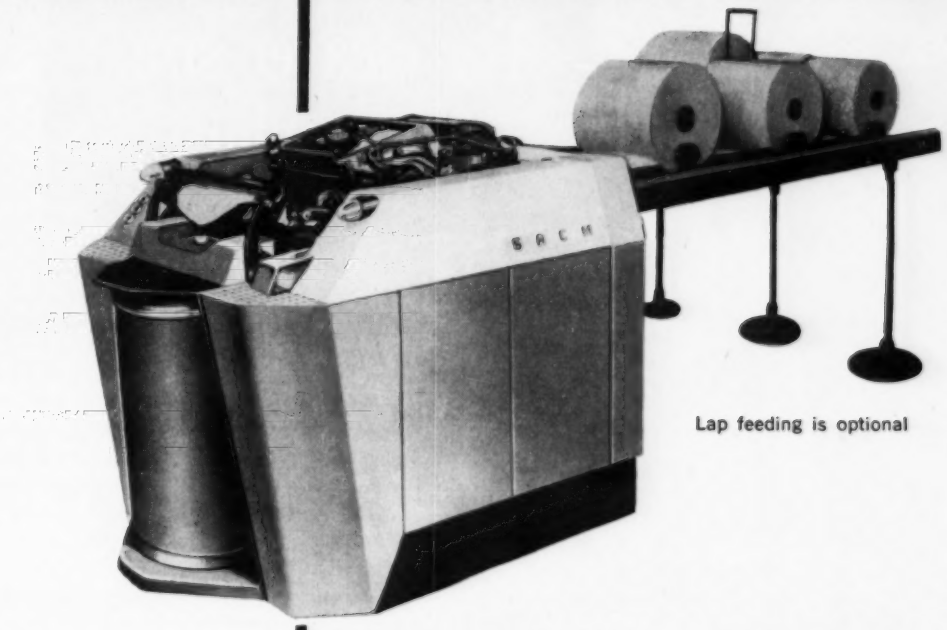
YEARS OF SERVICE, freedom from maintenance, resistance to moisture—that's what these C-D-F parallel plugs, knife guides, binder bushings give the mill operator.



STRONG, SILENT CELORON makes both drive and driven gears. Metal gears don't develop excess play, last longer when they mate with Celoron. Many applications are 100% Celoron-geared.

Announcing | *the first Innovation in more than twenty-five years in*

COMBING | WORSTEDS & SYNTHETICS



Lap feeding is optional

The Mulhouse Works of the Societe Alsacienne de Constructions Mecaniques where over 6,000 employees produce some of the most carefully engineered machinery in the world.

The PERL rectilinear Comb will run at 175 nips per minute and give at least 20% more production than any other French-Type Comb. Instead of making combs ever wider, more difficult to set, to maintain and to operate efficiently, SACM now sets the pace in another direction. *The* world-known specialists and inventors of the French comb pioneer once again by making a high speed narrow Comb, with some dimensions and parts in common with their highly appreciated "PLB" Comb, of which the world textile industry has 10,000 in operation.

New drives the result of first-rate modern design and metallurgy, allow high speeds and performances without vibration or undue strains. The new *suction system* gives cleaner work (no impurities are projected back onto the sliver) and the troublesome burr-knife has been done away with. Double stripping of the top comb, settings by graduated scales, extra-large can delivery, automatic safety devices — give better, easier and more efficient operation.

Other features include optional lap feeding (which gives substantial savings in noil percentage) for wool, and the good-looking and easy-to-clean body of streamlined design. Definite savings in labor, maintenance, down-time and floor space combined with quality production make this machine pay for itself in record time.

Demonstration Units are in the United States and many other countries. Write or call our nearest agent to see the PERL Comb and have some of your stock run on it.

SOCIETE ALSACIENNE DE CONSTRUCTIONS MECANIQUES
MULHOUSE, FRANCE
World Wide Sales & Service Organization

Agents for worsted machinery in the United States and Canada:
ATKINSON, HASERICK & CO., INC.
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For clearer size, truer colors

. . . in warp sizing and in finishing, use TEN-O-FILM starches.

In warp sizing, TEN-O-FILM starches cook completely in thirty minutes and remain stable through prolonged heating and circulating. Sizing and desizing of all types and blends of yarns may be done at lower temperatures to reduce "bleeding," and permit use of a great variety of dyes.

In finishing, the clarity of film produced by TEN-O-FILM is a real advantage. There is no masking of colors in dyeing man-made fibers.

Our technical service group has had wide experience and marked success in adapting this versatile starch to the varied needs of many textile applications. The production advantages and process improvements achieved by TEN-O-FILM can be fitted to your needs by consulting our textile technicians. Contact our nearest sales office or write direct.

TEN-O-FILM® starches

Fine products for the Textile Industry: EAGLE® • FOXHEAD® CLARO® • GLOBE® and TEN-O-FILM® starches • GLOBE® and EXCELLO® Dextrines.

CORN PRODUCTS SALES COMPANY
17 BATTERY PLACE, NEW YORK 4, N.Y.

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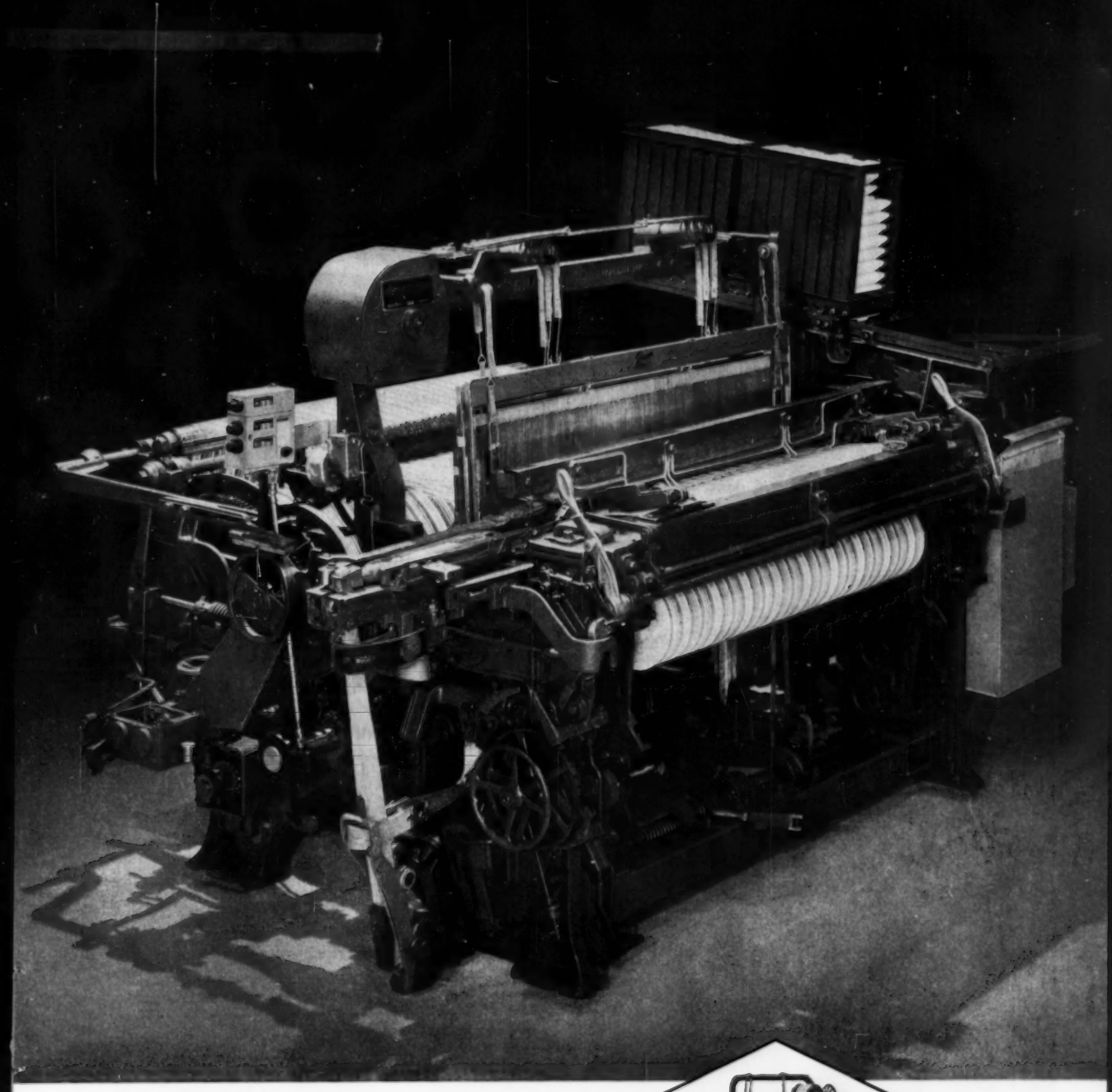
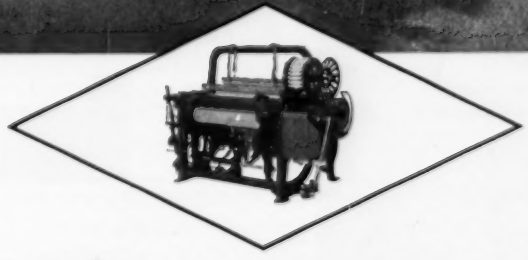
For more data, circle A-29 on Reader Service Card →





Obsolescence is natural . . . in textile machinery because of continual research and development • Modern Draper looms with countless new improvements save time and money in weave sheds throughout the world • New Draper looms keep your mill in a competitive position in todays changing markets.

DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N.C. • SPARTANBURG, S.C.

New Fundamental Chemical Discovery Creates A

BETTER SIZE FOR SYNTHETICS

New noncongealing Mira-Film Acetate Gum—developed especially for synthetics—gives noticeably superior adhesion. Forms clear, tough, flexible film that reduces warp stops, shedding, fuzz balls. As much as 2% better weaving efficiency demonstrated in actual mill tests!

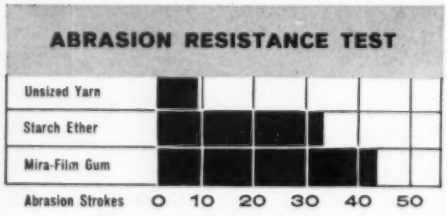
Now, after over two years of intensive research, the A. E. Staley Mfg. Co. announces a new concept in the sizing of acetate, viscose, and other man-made fibers—through the use of Mira-Film Acetate Gum. Made by an exclusive process, so unique that a basic process patent has been applied for, Mira-Film is available in a *complete* range of viscosities.*

Mira-Film is particularly outstanding in applications with spun synthetics and their blends. For example, its chemical affinity for acetate yarns results in noticeably superior adhesion. And Mira-Film forms a tough, flexible film with increased abrasion resistance. Mill tests on a 90/10 Viscose/Acetate blend produced a 1% to 2% improvement in weaving efficiency.

More effective protection greatly improves weaving efficiency. Reduces breakage, shedding, fuzz balls and matting on drop wires . . . virtually eliminates thin spots. Cuts costly down-time.

Staley's exclusive development sets a new high, too, in uniformity . . . permits a degree of process control heretofore unattainable. Thus, Mira-Film Gum has minimum variation in viscosity or other physical properties, from bag to bag or from carload to carload.

Why not get all the facts about new Mira-Film Gum? For further information, see your Staley Textile Representative at the branch office nearest you or write today to: A. E. Staley Mfg. Co., Decatur, Ill.



*Mira-Film is one of a series of new products with a broad spectrum of characteristics, made possible by this new Staley development.

Compare The New Mira-Film Gum With Your Present Starch Size!

1. Completely noncongealing
2. Lower pasting temperature
3. Can be used at lower size box temperatures (120° F)
4. Paste is long and stringy
5. Faster cooking—only 30 minutes required at normal concentration
6. Requires wax additive only
7. Can be made in a full range of viscosities

A. E. STALEY MFG. CO., DECATUR, ILL.

Branch Offices: Atlanta • Boston • Chicago • Cleveland • Kansas City
New York • Philadelphia • San Francisco • St. Louis

For more data, circle A-30 on Reader Service Card

From Korea to Now

The stretch of years from the Korean War until now is generally recognized as a period of decline for the textile industry.

The decline has been considerably overemphasized for a number of reasons:

1. It occurred in a period when the over-all economy was growing. This growth was perhaps not as fabulous as the general impression held it to be; but it generated enough enthusiasm to make "growth" a typically American band-wagon fetish and to make a nongrowing industry an outlander.

2. The decline occurred in a period of sharp and changing national and world politics in which economic policies were used more or less as a football in the power-politics game. Because the textile industry was hurting, it was forced to become the outspoken opponent of damaging national policies. This role required that the industry's troubles be publicized and emphasized.

3. The decline forced long-overdue changes in the industry itself, notably liquidations and migrations of mills long since uneconomical and obsolete. In a period of booming general business, these failures were publicized as though they bordered on business immorality and industry incompetence.

Adjustment at Work

But it is becoming clear now that a great deal of the late woes of the textile industry resulted from changing markets and production adjustments to meet the changes.

The textile industry was neither a dead industry nor a sick one. At the time the so-called decline was in progress, some branches of the industry were flourishing and expanding.

Take knitting, for example.

In the period of "decline," a great deal was written and said about the woes of full-fashioned-hosiery mills. Full-fashioned-hosiery knitting did decline. But why? Because style preference swung in favor of seamless hosiery.

Over-all, the knitting branch of the textile industry has been the only branch that increased its expenditures for new equipment and supplies every year for the last four years [Textile World, Jan., p. 52]. It very likely will increase again this year.

But more-fundamental changes than style swings have been at work.

In its latest annual report "Ten Years of Cotton Textiles," The Association of Cotton Textile Merchants of New York pinpoints some of the changes that have occurred in woven cotton fabrics and their markets.

Six-Year Changes

The most significant change—one that accounted for much of the bad-business noise—was the swing toward apparel fabrics.

In 1951, apparel fabrics accounted for only 37% of total cotton-textiles output. In 1957, six years later, 50% of the output went into apparel. That represents an increase of almost 1½-billion linear yards of cotton broad woven goods in apparel constructions. In the same period, industrial fabrics decreased from 32% of the total output to 21%—a decrease of more than 1-billion yds.

These changes represent a swing of more than 2½-billion yds., about one-quarter of all cotton goods produced in this country.

That is a tremendous production and market adjustment to make in six years. Seldom is any industry forced into such fundamental and rapid adjustment.

And the end is not in sight yet. Little has happened to recapture for textiles the loss of industrial uses to paper and plastics or for cotton the loss to man-made fibers. Better business will increase present markets, but that is not the same as regaining lost markets.

The Lesson for You

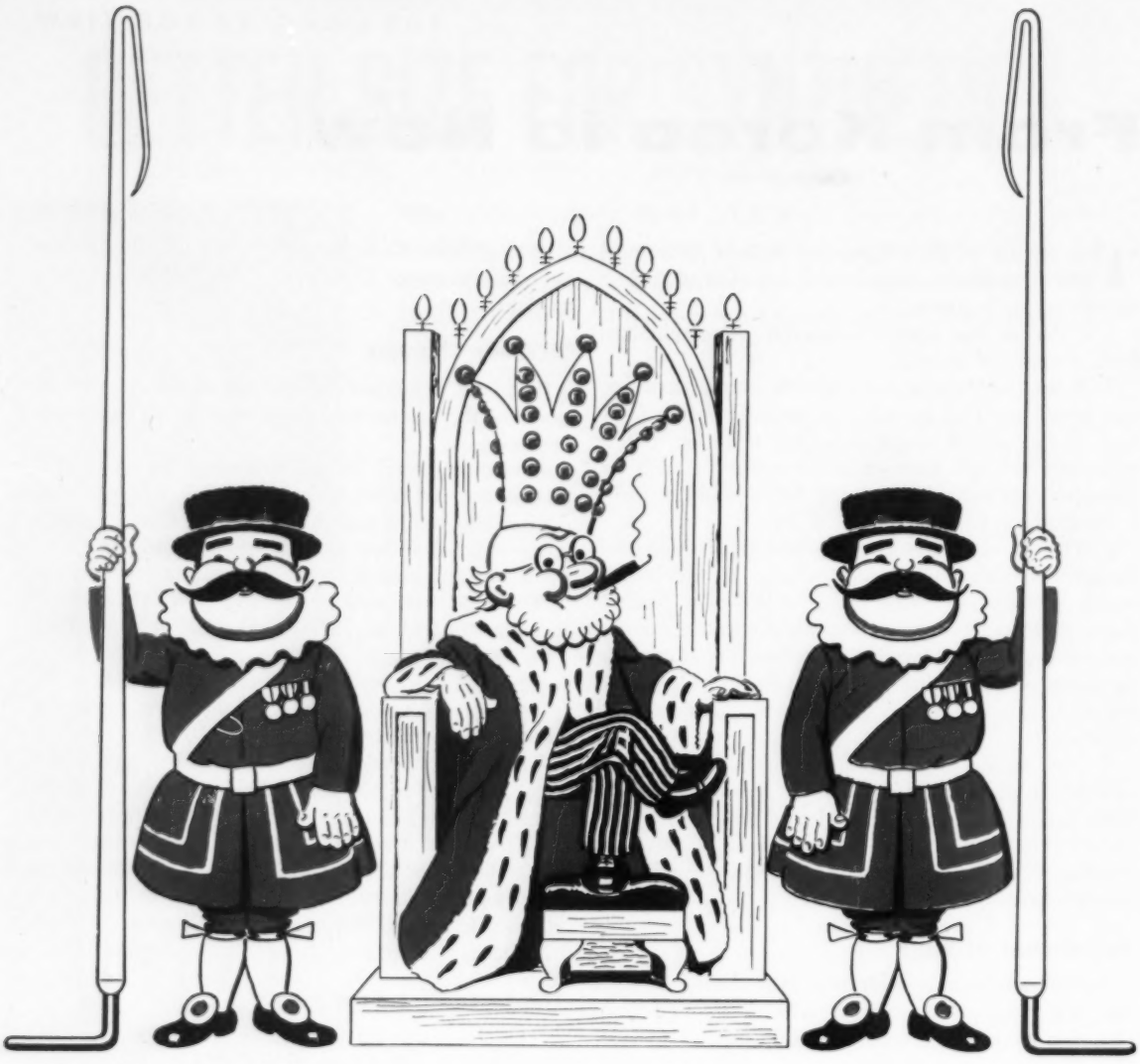
Therefore the next few years will bring more of the same kind of adjustment for individual mills and mill men. Manufacturing and selling apparel fabrics is like a different world from manufacturing and selling industrial fabrics.

It is faster moving, riskier, and more demanding of the men in both manufacturing and selling. There is no place at all for half-alertness and half-concentration.

In the years since Korea, many "old-time," although not necessarily old in years, textile men have been looking for jobs. Many of them left the industry altogether because they could not or would not recognize the changed conditions and reorient themselves, their thinking, and their skills.

There may be many others to follow the same path in the next few years.

D. M. Thomas



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Textile World

Volume 109, No. 3, March, 1959

TEXTILE-MILL LIGHTING— *Surge of Improvement Due*

- A surge of lighting improvement is in the making for textile mills. Illuminating Engineering Society's new recommended lighting practices for textile mills are already paying off in some mills, with lighting levels up to 100 to 150 ft.-cs.
- The pay-off: production-cost benefits.

A NEW BASIS for establishing the required foot-candle lighting levels for industry has been developed by Illuminating Engineering Society, and new recommendations for quantity and quality of illumination in the textile industry are founded on this research.

The value of lighting is determined to a great extent on the basis of benefits in relation to cost. Benefits include such things as better production per machine per worker per square feet of factory space and improved work per employee. These benefits come primarily from better and faster seeing.

In 1958, Dr. H. Richard Blackwell of the University of Michigan reported on a research project conducted for IES over the past 10 years. His studies establish beyond reasonable doubt the minimum lighting levels needed for various seeing tasks. His work is based on human beings working at their peak efficiency and expending maximum effort.

As a result of the Blackwell report and other data accumulated over many years, IES has revised its recommended levels for various seeing tasks. These revised recommended levels are not as high as Dr. Blackwell's research indicates they should be because of the economic and technical limitations of obtaining them at present.

WHAT IS GOOD LIGHTING?

Levels of illumination are influenced by two things:

1. Current recommended practice that's based on weighing all the factors in today's knowledge of seeing and today's cost of lighting.
2. Established objectives. What is best seeing? Also, what are the environmental factors that make an area a place where people like to work?

The IES tests show that some seeing jobs in the textile industry need the following lighting levels to obtain maximum visibility for maximum speed and accuracy: (1) broken yarn on a bobbin of black spun yarn, 2,900 ft.-cs.; (2) orange chalk marks on brown tweed, 266 ft.-cs.; (3) brown stain on gray cloth, 1,100 ft.-cs.; and (4) color difference in brown cloth, 870 ft.-cs.

The IES new recommended foot-candle levels for textile mills vary from 30 to 500 ft.-cs. and are more than double the old recommendation. In most areas, the levels are below the optimum because of cost. However, the revised practice is toward better visibility and attendant benefits that come from better seeing: higher production, reduced seconds, fewer accidents, better housekeeping, and better employee morale.

Objectives of Lighting

The concept of optimum lighting is divided into five interrelated objectives:

1. Best seeing

The question is, what is the illumination for each task for best visibility? For difficult tasks involving low contrasts, low reflectance, and small size, several hundred or even thousands of foot-candles are needed.

For visibility alone on relatively easy tasks such as reading, a high level of accuracy and speed is obtained at 1 or 2 ft.-cs. But many factors are involved, such as the ability of the eye to focus, with the result that most people choose 300 to 1,000 foot lamberts as the maximum adaptation brightness.

Therefore brightness below the correct range results in seeing less than optimum; and above the correct range, people are visually uncomfortable. Foot-candles are specified on the basis of reflectance of the task.

2. Stimulating environment

As the general levels of brightness

Based on data supplied by Illuminating Engineering Society and General Electric Co.

of an area are increased, activity in the area is stimulated. A bright sunshiny day is pleasant and stimulating; but as the day becomes cloudy, the environment is less stimulating. With light interior finishes, a stimulating yet comfortable environment indoors is in the 300- to 1,000-ft.-c. range.

3. Comfortable contrasts

Contrasts in the spaces surrounding tasks should be kept down to a three-to-one ratio or less to avoid harsh contrasts throughout the room.

4. Interesting contrasts

This phase of lighting is closely related to stimulating environment. Additional light at given points affects the general level of illumination by giving a softer and more pleasing light. First, it introduces directional light that is the counterpart of sunshine. And second, it establishes an area that is higher in brightness than most of the environment.

This concept of lighting has been applied in store lighting, and it will be used in industrial buildings.

5. Dynamic lighting

Natural lighting conditions are not static, and changes that occur have a lot to do with employees' enjoyment and motivation. Most of the tools are available to control dynamic lighting, but applying this idea indoors is going to require new design data.

Some installations meet one or two of the five lighting objectives, but none meet all five. However, the objectives establish the direction of lighting progress for at least some years to come.

HOW MILLS ARE IMPROVING LIGHTING

Most mills that have already stepped up their lighting have raised lighting levels to the 100-ft.-c. range. But in the next 10 years, 500 ft.-cs. will be common.

Newer fluorescent lamps introduced the past two years almost double the output of high-output fluorescent lamps and triple the output of slimline fluorescent lamps. As a result, new IES recommended lighting levels can be reached and maintained at substantially lower installation and maintenance costs. Initial costs are reduced 15 to 20% over high-output rapid-start systems, and over-all costs are reduced 10%.

In a typical textile lighting installation such as a weave room, continuous rows of fixtures on 15-ft. centers provide a maintained lighting level of 100 ft.-cs. At a 15-ft. mounting height with typical upward-light fixtures, the maximum spacing to obtain uniform lighting is 20 ft.; the minimum lighting level that can be obtained with adequate coverage is 75 ft.-cs.

If lighting levels meet IES recommendations, there will seldom be a problem of obtaining uniform illumination with two-lamp industrial fixtures.

There are many installations of lamps at 10- and 12-ft. mounting heights with satisfactory comfort and visibility results. Nearly all textile mills are now using upward lights with 30° to 35° crosswise shielding units with white sides. These fixtures result in substantially increased comfort and more constant light output. Where lengthwise viewing predominates, cross louvers are used.

Various Lamps Give Good Results

Although most areas in a textile mill are equipped with fluorescent lamps, there are some applications for mercury and filament lamps. Recent improvements in mercury lamps result in 10 to 20% higher output than older lamps.

Fewer fixtures are used for the same lighting level. In existing installations, the new lamps raise the maintained lighting level without changing lamp wattage.

For filament-lamp installations, light output is increased 15% with the newer lamps. The result is 15% higher maintained lumens without increases in lamp wattage or lamp price.

Lamps Plus Air Conditioning

Recently, fluorescent fixtures combined with air conditioning have been used in offices of textile mills, and the system can also be used in air-conditioned production areas. The cool air passes the fluorescent lamps to cool them and give higher light output.

Some luminous-ceiling installations utilize the cavity above the luminous ceiling to distribute conditioned air and thus cool the fluorescent lamps.

There's variation in illumination throughout a room with any type of lights because levels tend to be lower near the walls. In many areas, it is practical to concentrate light in the vicinity of the task and allow lower levels in circulation areas.

How Supplementary Lighting Helps

Supplementary lighting is necessary in many areas of textile mills, and the fundamental problems of supplementary lighting are similar in all areas. Usually there is not enough brightness difference between the seeing task and its background.

Several lighting methods increase the brightness difference: (1) higher lighting level, (2) directional lighting, (3) reflections of luminous elements, (4) transillumination, (5) black light, and (6) polarized light.

Seeing tasks such as grading rapidly moving denims and warping colored woolens and worsteds generally involve the discrimination of fine details for long periods under conditions of poor contrast. To provide the required illumination, a combination of general lighting and specialized lighting is necessary.

The design and installation of the combination system must provide enough light; and in addition, they must provide the proper direction of light, diffusion, and eye protection. As far as possible, lights should eliminate direct and reflected glare and objectionable shadows.

Better Maintenance Is Required

Cleaner lamps and brighter lamps of course help maintain the new IES standards. Increasing labor costs are increasing emphasis on lighting maintenance. Maintenance cages that travel alongside lighting units are one new method of greatly reducing costs where lamps are mounted at considerable height. Several other devices also reduce time and effort.

In some areas, lighting-maintenance companies are being used to handle the entire maintenance of lighting systems.

Group replacement of lamps is being used by more mills to reduce the cost of replacing lamps; at the same time, replacement costs are reduced for other components such as ballasts and starters.

At the end of lamp life, there is an added strain on ballasts and starters that is greatly reduced by group lamp replacement.

Lamps are generally replaced when 20% are out, and this condition occurs at 80% of lamp life. This period of lamp life is reached every 1½ to 2 years. Labor saving is 60 to 75%, which more than offsets additional lamp cost. Results are over-all savings in lamp replacement costs and more light.

	NEW RECOMMENDATIONS	OLD RECOMMENDATIONS
Cotton	**Ft.-Cs.**	**Ft.-Cs.**
Opening, mixing, picking	30	15
Carding and drawing	50	25
Slubbing, roving, spinning, and spooling	50	20
Beaming and slashing at comb		
Gray goods	50	20
Denims	50	50
Inspection		
Gray goods (hand turning)	100	50
Denims (rapidly moving)	500	100
Automatic tying in	150	100
Drawing in by hand	200	100
Weaving	100	50
Silk and Man-Made Fibers		
Soaking, fugitive tinting, and conditioning or setting of twist	30	10
Winding, twisting, rewinding; and coning, quilling, slashing		
Light yarn	50	30
Dark yarn	200	70
Warping (silk or cotton system) on creel, on running ends, on reel, on beam, on warp at beaming	100	50
Drawing in		
On heddles	200	100
On reed	200	100
Weaving	100	30
Woolen and Worsted		
Opening, blending, picking	30	15
Grading	100	100
Carding, combing, recombing, gilling	50	35
Drawing (white)	50	25
Drawing (colored)	100	50
Spinning (frame), (white)	50	25
Spinning (frame), (colored)	100	50
Spinning (mule), (white)	50	20
Spinning (mule), (colored)	100	40
Twisting (white)	50	25
Winding (white)	30	20
Winding (colored)	50	40
Warping (white)	50	20
Warping (white), (at reed)	100	75
Warping (colored)	100	40
Warping (colored), (at reed)	300	75
Weaving (white)	100	40
Weaving (colored)	200	80

NEWER FOOT-CANDLE LEVELS recommended by IES for textile mills are more than twice those of old standards. Foot-candles for grading and warping woolen and worsted colored goods, inspecting denims, and automatic tying and drawing in by hand on cotton and man-made-fiber fabrics are obtained with a combination of general lighting and specialized supplementary lighting.

FINAL INSPECTION is made under ultraviolet light as the yarn is wrapped for shipping.

How Borden Mfg. Co. Spins SOFT CARDED YARN

To meet the ever-increasing competition in the carded-yarn market, Borden Mfg. Co., Goldsboro, N. C., has—

- **Improved spinning machinery and techniques**
- **Developed a special formula for waxing yarn**
- **Set up a multiple-inspection system**

BREAKING STRENGTH and yarn appearance have been upgraded substantially by improving manufacturing and inspection procedures at Borden Mfg. Co., Goldsboro, N. C.

The 20,604-spindle mill produces carded sales yarn ranging from 6s to 10s extra-soft twist and 8s to 30s warp-twist and knitting yarn. Production is about 125,000 lbs. per week. End products are mostly underwear and hosiery.

Spinning Is Modernized

The 83 spinning frames, recently modernized, have new drafting, builders, and suction cleaners. Umbrella creels were put on one group of frames to make cleaning easier.

For the soft yarn, spindle speed ranges from 3,000 rpm. for 6s to 8,000 rpm. for 30s. The 1-in. front rolls turn about 5 rpm. faster than standard, or from 150 to 185 rpm. Twist multipliers range from 2.50 to 3.25. Total draft is 25 to 32, and break draft is 1.283.

Ends down are from 24 to 28 per thousand spindle hours. Evenness for the 6s is 8 to 9%; for the 30s, it is 13 to 14%.

Frame improvements, including an increase in ring size from 2½ to 2¾ ins., increased the net weight of yarn on the bobbin from 4½ to 8 oz. Supply packages are 12x6 and 10x5.

Spinning-room air is cleaned electrostatically and filtered, but at the present time it is not refrigerated.

Winding Speed Is 436 Yds. per Min.

Borden operates nine cone winders and two tube winders. From 7½- to 8-in. cones and 3- to 6-in. tubes are produced. Average winding speed is 436 yds. per min.

For 6s yarn, the blade is set at 0.021 in. and the comb at 0.057 in. For 30s yarn, the respective settings are 0.014 and 0.030 in. Combs having 25 teeth per inch are used for 6s to 20s; 40 teeth per inch are used for 20s to 30s.

Borden has a girl whose primary job is to buff rolls; but in her spare time, she mixes wax for the winders according to a formula developed by the mill.

For summer use, two parts of Aristowax (143° to 150° melting point) are combined with one part of Esso Standard reed wax. In winter, the proportions are one to one. These formulas give the yarn a smoother appearance and keep down lint very effectively.

Inspecting Is Stressed

Yarn inspection begins at the winders, where a special operator inspects each cone and attaches to it a special identification sticker. These stickers, printed in the inspection room, show the yarn number, operator, shift, day, week, and year.

The next step is to carry the yarn to the scales, where it is weighed and the weight is recorded. Then each cone is placed on a rack and again inspected for defects.

If the yarn passes these two inspections, it is conditioned for 16 hrs. and permitted a 2% regain. Temperature in the conditioning room is varied according to outside conditions so that the regain remains constant at all times.

Ultraviolet Light Is Used

After conditioning, the yarn is put on a packing table and inspected for the final time before it is wrapped. This inspection is made under ultraviolet light to be sure that no streaks were caused by blending old and new cotton. The wrapping-and-inspecting table is located in an alcove where outside light is kept out by a curtain.

After the yarn is wrapped, it is placed in carton boxes, weighed, stenciled, and shipped.

Versatility Is Needed To Produce

UPHOLSTERY FABRICS

Brookline Fabrics, Inc., Greenville, S. C., finds that a wide range of upholstery fabrics is necessary to give each customer what he wants. Based on its findings, the mill has —

- **A versatile manufacturing unit**
- **Hundreds of available patterns**
- **Many original designs**

"UPHOLSTERY FABRIC STYLES are constantly changing," says Thomas Nicholas, vice president of Brookline Fabrics, Inc., Greenville, S. C. "There is change not only in the styling of fabrics but also in the fibers of which they are made.

"Cotton, mohair, and wool are giving way to man-made fibers and blends. The so-called natural fibers will probably lose still further when prices become more nearly equal.

"Customers are becoming better educated and more selective. The upholstery in an automobile has become a major factor in the sale of the vehicle. People want individuality in upholstery fabrics as well as good looks and durability."

With this new look at the upholstery-fabrics picture, Brookline is placing particular emphasis on designing and development in its operation. The plant is being made more versatile so that production can be switched from one fabric to another over a wide range with a minimum of lost time.

New Patterns Are Developed

New patterns are being designed at Brookline, and original designs are being bought to build up a complete line of samples. The variety of patterns, colors, and combinations that the mill can produce is numbered in the hundreds. The fabrics that are woven range all the way from contrasting jazzy patterns to conservative solid styles and subdued pastel shades.

Brookline's policy, according to Mr. Nicholas, is to give the customer what he wants—not to try to tell him what he should have. In line with this policy, no stock items are woven. All cloth is made to order and to the customer's exact specifications.

In developing a new pattern, the design is painted with water colors on ruled jacquard design paper. From this design the number of warp and filling ends per inch are figured. From the ends per inch and the desired weight per yard, the designer then figures the yarn numbers or denier. He can then figure the cost yer yard.

Master Cards Are Made First

An operator punches holes in a set of master cards to match the pattern as outlined on the squares of the original design. These master cards are then placed in a machine that automatically punches any desired number of jacquard cards. A set of these cards containing a complete repeat of the pattern in regular sequence is fastened together in chain form by a card lacing machine.

When a small amount of cloth has been woven from the new pattern, it is doffed and checked to see that it conforms in every way to the original design and specifications. Preparing, checking, and arranging samples is a full-time job for several employees of the mill.

Brookline buys all its yarn. It uses about 30,000 lbs. of cotton, nylon, rayon, acetate, mohair, and metallic yarns weekly. It weaves and finishes a variety of upholstery fabrics of many designs, including tapestry and pile.

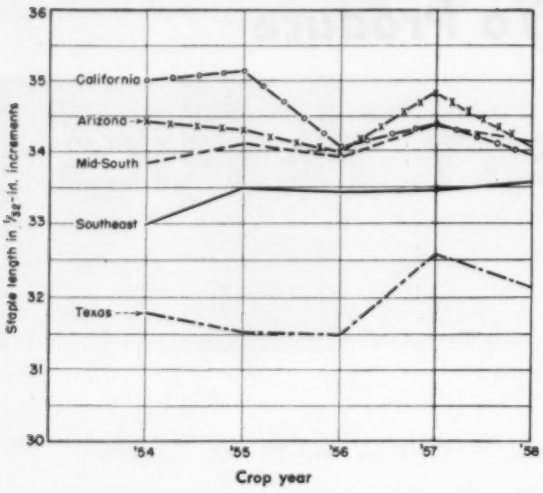
Looms Are Equipped with Jacquards

The flat-goods mill has 56 multishuttle looms. They are W-2 and C-4 models; the latter are capable of producing tri-color work. The 35 pile-fabric looms are equipped with three-position jacquards, and double-shuttle looms are used to weave pile fabrics.

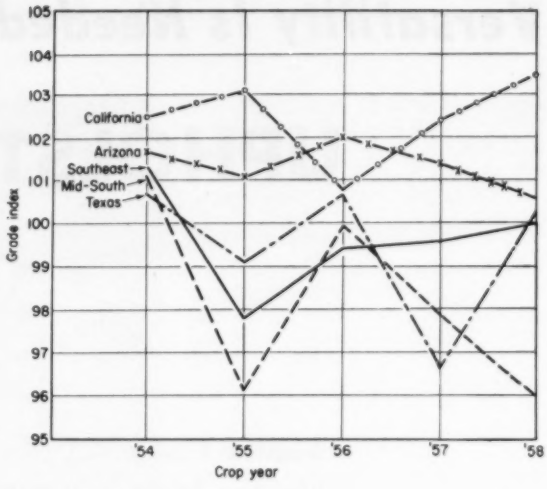
The looms operate at 100 to 104 ppm., and loom efficiency is about 85%. Fabric in widths to 72 ins. can be woven.

After weaving, the cloth is closely inspected and burled before finishing. Inspecting is done on an inclined surface, which can be lowered to form a table top for flat inspection and folding.

COTTON STAPLE LENGTHS



COTTON-GRADE INDEXES



What You Can Expect From 1958 COTTON

USDA fiber and spinning tests, based on early and midseason pickings and compared with last year's crop, show that—

- **Cotton is generally better**
- **Fiber and yarn strength is up**
- **Appearance is off in some areas**

By F. L. GERDES, Cotton Technologist, USDA, Retired

THE 1958 COTTON CROP was harvested under more favorable conditions in general than the 1957 crop with the exception of cotton produced in the Mid-South area. The Mid-South early-season harvest was hampered by 6 to 12 ins. of rainfall in September; but October had ideal harvesting weather that resulted in marked quality improvement in some sections of the area. In most other areas, high-quality cotton was harvested from early season through midseason.

Yarn strength showed marked decreases from early through late pickings. These losses were accompanied by slight decreases in fiber length and marked reduction in strength. Both Micronaire fineness values and maturity went progressively lower as the season advanced. Associated with these poorer fiber characteristics were increases in card-web neppiness and reductions in yarn-appearance index.

Grade Remained Constant

Early and midseason test lots showed very little difference in grade for the Southeastern states, where ideal harvesting weather prevailed for a long period.

Staple length on the average showed only a slight loss as the season advanced. The small differences in yarn break factors, associated with stage of harvesting, were generally explainable on the basis of staple length and fiber strength differences.

Micronaire values were slightly lower for midseason cotton than for the late-season lots in all states of the Southeast except North Carolina. Both fiber strength and yarn break factor increased in Georgia and decreased in Alabama as the season advanced.

The area as a whole showed slightly lower yarn-appearance grades, associated with nep-count differences, between the late and early pickings. There was little change in manufacturing waste; Georgia showed a small increase and North Carolina a slight decrease.

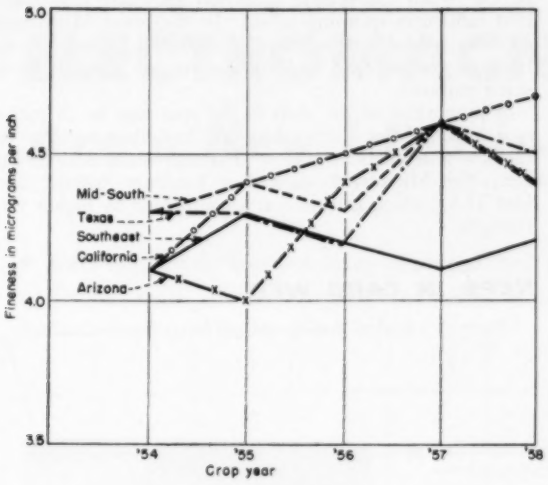
Weather Was Favorable

In the Mid-South area throughout October, when a high percentage of the 1958 crop was harvested, rainfall was light or about half normal as compared with 6 to 12 ins. in September. For this reason, grade showed an unseasonable improvement in the Mississippi Delta and Northeast Louisiana areas.

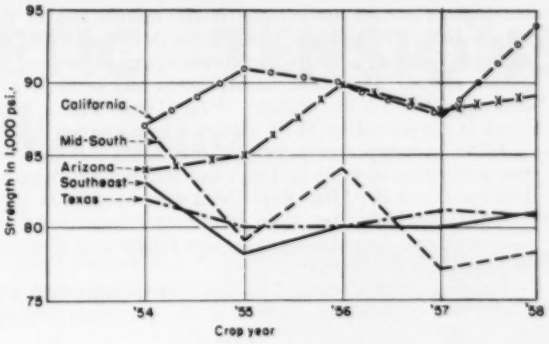
The average increase in yarn break factor for Delta cotton from early to midseason was equivalent to an increase of $\frac{1}{16}$ in. in staple length. The staple length averaged about the same for the two stages of harvest.

Fineness was the only fiber property that showed a change that could have been responsible for the record high breaking strength for the midseason Delta cotton. Micronaire readings averaged just under the range considered to be average for American upland cotton. The increased fineness was associated with reduced maturity, which in turn resulted from the hastening of boll opening through defoliation.

FIBER FINENESS BY MICRONAIRE



FIBER STRENGTH BY PRESSLEY TEST



The other areas in the Mid-South showed very little change in fiber fineness and maturity as the season advanced. Generally, all Mid-South areas had small changes in fiber tensile strength from early season to midseason.

Appearance Is Up

The best yarn-appearance values were found in West Tennessee and Eastern Arkansas, where the greatest reduction in neppiness took place as the season advanced. These cottons also were characterized by average grades.

For the Mid-South as a whole, 1958 lots averaged 78 length uniformity ratio, 4.4 Micronaire reading, 78 maturity index, and 78,000 psi. fiber tensile strength. Micronaire readings averaged 4.3, and maturity index was 77 for all midseason cotton from the Mid-South. Other fiber properties showed identical averages for the early and midseason test lots.

The two southern areas in Texas had yarn break factors for midseason cotton that compared favorably with those for early-season cotton; the other areas showed normal reductions later in the season. Staple length and fiber strength losses accompanied these changes in yarn break factors. Micronaire values on the whole were average for both stages of harvest in Texas, but yarn appearance grades were slightly off for the midseason cotton.

The yarn-appearance differences were comparable to those for raw-cotton grades. Increased neppiness reduced yarn appearance from early to midseason in South Texas. All other areas showed smaller nep counts later in the season. The Rio Grande Valley and West Texas are the only areas that showed a higher manufacturing loss from the late cotton than from the earlier crop.

Yarn break factors and appearance grades held up well in Arizona as the season advanced because of little change in fiber properties. Slightly better yarn appearance was associated with a reduction of from 17 to 13 neps per 100 sq. ins. of card web.

California, always noted for producing the highest average break factor of any area for cotton ranging from 1 1/32 to 1 3/32 ins. in staple length, showed the usual stage-of-harvest change in yarn strength. Break factors averaged 2,624 for early-season cotton, equivalent to that normally obtained from cotton stapling 1 1/8 in. The figure was 2,517 for midseason cotton, which is equivalent to 1 1/32-in. cotton.

PROPERTIES VARY WIDELY DURING FIVE-YEAR PERIOD

An analysis of the early-season cotton crops since 1954 shows that Micronaire values have been growing progressively coarser in Texas, Arizona, and California, whereas fineness remains about the same in other areas.

Yarn breaking strength is related to fiber strength in most areas with the possible exception of Texas. In this state, the trend is upwards for yarn strength but there is no consistent change in fiber strength. Staple length, which has been getting better, is apparently the controlling factor in this instance.

Over the five-year period, yarn-appearance grades fluctuated somewhat except in the Southeast, where the grade indexes have been from 101 to 103, a value considered average. Until 1958, cotton from Texas and the Mid-South had better than average appearance values. Arizona cotton generally had the poorest appearance, with California only slightly above or below.

Card-web nep counts, like appearance grades, have shown inconsistencies over the years in most areas except Arizona; here these imperfections show an undesirable trend. For early-season 1958 cotton, nep counts were higher in the Southeast, Mid-South, Texas and Arizona. In California, 1958 cotton compared favorable with 1957 cotton in this respect.

California cotton had no change in yarn appearance, nep count, or manufacturing waste from early to midseason cotton, but there was a slight average decrease in the grade of the raw cotton.

The highest average yarn break factor for cotton through the midseason stage of harvesting (average of early and midseason test results) was found in California, and the

next best was in Arizona.

The Southeast, with ideal weather conditions, showed the highest average break factor in the rainfall area of the cotton belt. This section excelled the Mid-South and all areas of Texas with an average break factor equivalent to 1 1/16-in. cotton. Most other rainfall areas had break factors equivalent to 1 3/32-in. cotton. West Texas had a good break factor for cotton of its average staple length.

As to yarn-appearance grades, the Southeast and the two southernmost areas in Texas had the highest; Arizona, Louisiana, and the Mississippi Delta were on the low side.

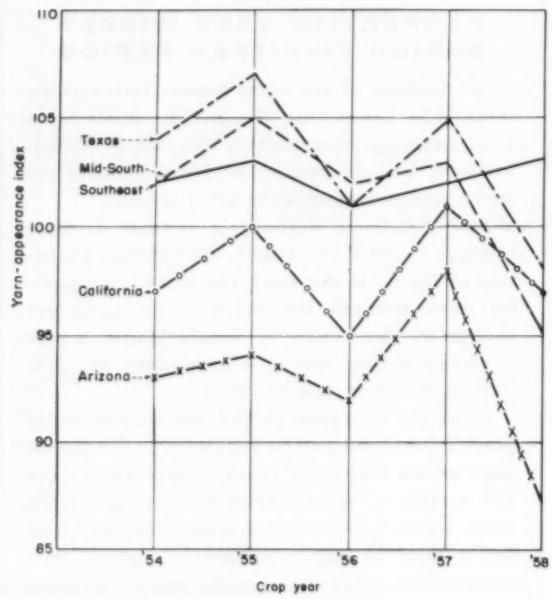
Unusually high fiber strength averages were noted in California and Arizona; lower average values were observed in most Mid-South states.

Micronaire values ranged from 3.9 in Georgia to 4.6 in California; most other areas were in the lower average range of 4.0 to 4.4.

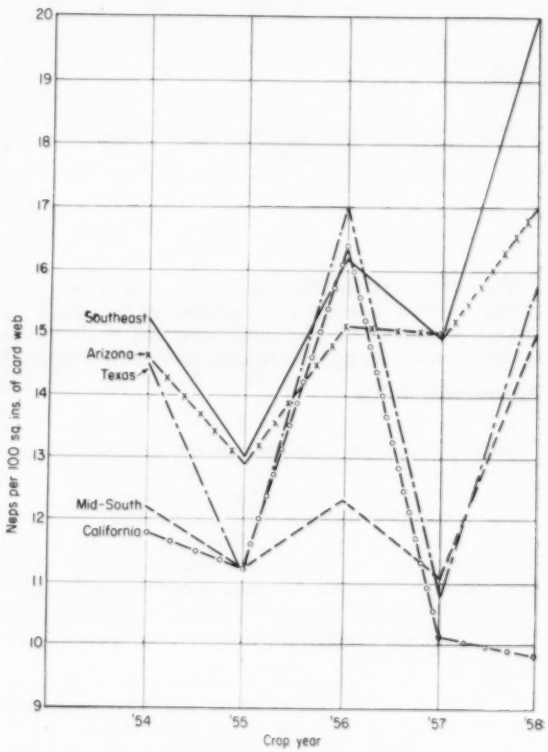
While data for late-season cotton are not complete at this writing, indications are that in most areas there will be the usual late-season reduction in grade and staple that influences spinning values. In the lower Mississippi, the loss is likely to be more pronounced because of the lateness of the crop and the failure of many bolls to reach maturity.

A proportion of the crop in the area may be characterized by low Micronaire values and low fiber maturity for the low and medium grades. Through midseason in this area, the Micronaire showed a tendency toward finer fiber (3.8), which in turn was accompanied by higher yarn strength.

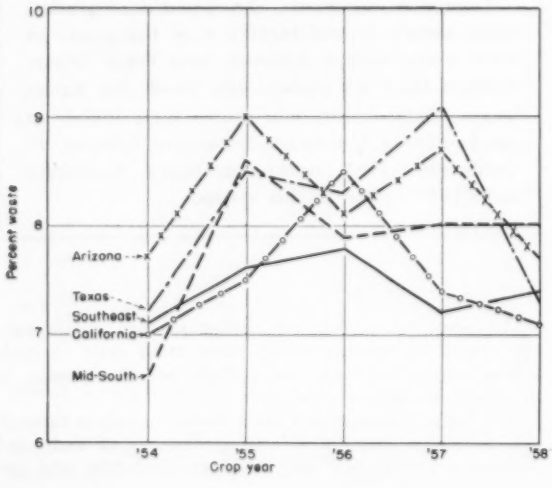
YARN-APPEARANCE INDEXES



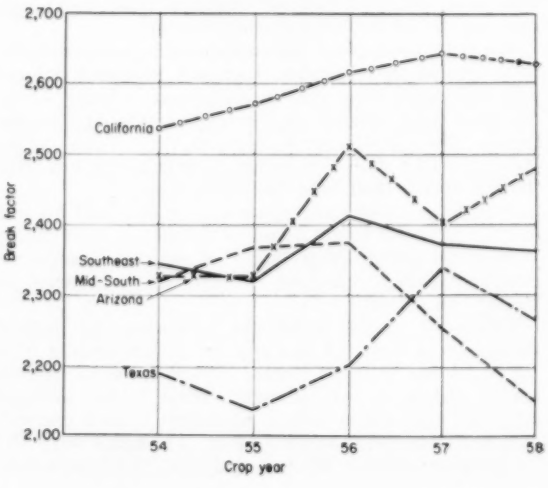
NEPS IN CARD WEB



PICKER AND CARD WASTE



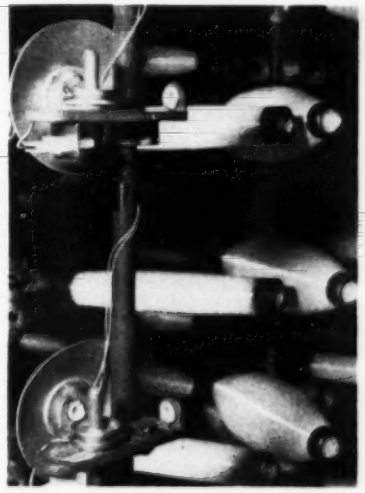
YARN-SKEIN BREAK FACTORS



ELECTROMAGNETIC TENSIONS

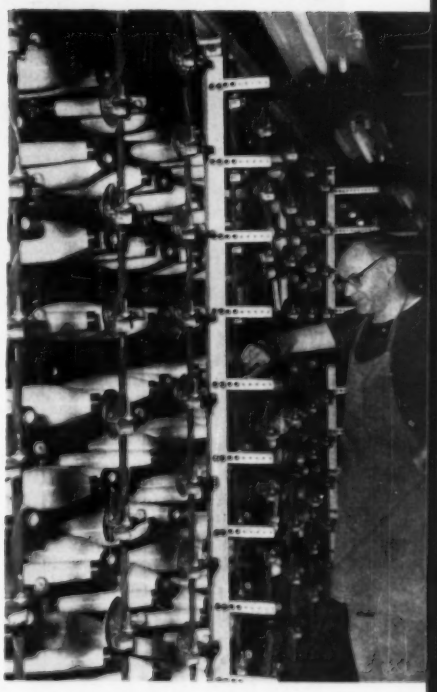
Are a New Idea in Warping

• Electromagnetic tensions have replaced multiple-post tensions at Fischer Mills. More-accurately controlled tensions have led to better warps and better tricot fabrics.



ELECTROMAGNETIC TENSIONS are wired together, and tensions are maintained at a constant rate on all ends. The tension devices at the rear of the creel are adjusted to create less tension to compensate for the greater distance from the warper.

TENSION is controlled on 40-den. yarns with an electromagnetic device that has a pulsating power to allow the disks to turn. Each tension device is connected with two wires, and all tensions are controlled from a single source.



TENSION-CONTROL PROBLEMS have been reduced at Fischer Mills, North Bergen, N. J., with an electromagnetic tension control for each end of the yarn on the creel. Fischer Mills knits tricot fabrics where uneven tensions may cause streaks in the cloth. Better warps and fabrics are now being made because of the better-controlled tension on the yarns.

Two 600-end creels have been fitted with the electromagnetic tensions. The former tension devices that had multiple-post tensions were removed and the electromagnetic tensions screwed in their place.

The current that provides the pulsating power to the tension disks is carried along two wires coiled around the creel uprights. Ducts have been laid along the top of each side of the creels, and the wires that run to the tensions are plugged into outlets located over each creel post.

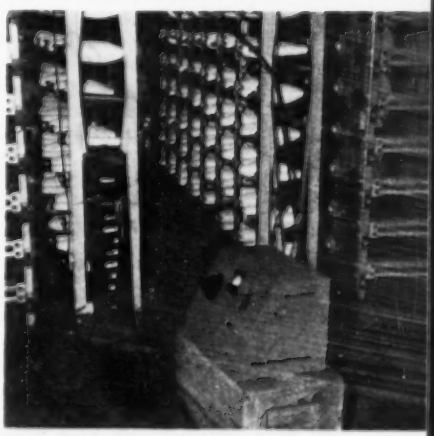
The wire in the duct runs to a control box located at the front of the creel. Tension on all yarns is controlled from this box.

Tension on 40-den. yarns is maintained at 2.5 grams as the yarn leaves the creel. Tension at the creel head is 4.5 grams when the yarns are run at 300 yds. per min.

Although the yarn is run from 2-lb. nylon pirns, the tension is maintained at a fairly constant rate because there are no tension posts to multiply the drag on the yarn. Each tension is adjusted so that a smaller area of the post is presented to the yarn to compensate for the drag on the yarns running from the back of the creel.

The pulsating power helps the disks keep rotating; and this action helps keep the disks free from dirt, size, and lint.

The warper tender occasionally inspects the disks as he replenishes the yarn supply, but no regular inspection is necessary.



CONTROL BOX at the front of the creel maintains the tension on all 600 ends of 40-den. nylon yarns at 2.5 grams. The warper is run at 300 yds. per min., and the controls are adjusted when the speed or the yarn is changed.

BATTERYHANDS' JOBS must be constantly revised to keep the workload within predetermined limits. Four factors determine the over-all number of looms per batteryhand, and two methods can be used to figure the job.

How To SET JOBLOADS FOR BATTERYHANDS

• Many factors affect the workloads of batteryhands, and the layout of their jobs must be changed constantly. Here are some methods to keep jobs laid out fairly when changes occur.

NO OTHER JOB IN THE WEAVE ROOM IS SO SUBJECT TO CHANGE as that of the batteryhand. Any change that affects the running time of the individual bobbins of filling increases or decreases the batteryhand workload.

When fabric styles are changed or relocated or when the weight of the filling is changed to compensate for deviation from standard in the weight of the warp, the batteryhand job layout must also be changed.

To give or take one or more batteries to balance out a job often causes a new layout for all the jobs in the room. Rarely will all the jobs come out even, and there is usually a fraction of a job left over. This fraction of a job can be used to train new batteryhands, or it can be used to fill out a similar fraction of a weaving job.

Mills Use Different Methods

Various mills use different methods to lay out batteryhand jobs. The first requisite is to establish the workload. The most common basis is bobbins plugged per hour, which varies from 400 to 700.

In most instances, low yarn numbers are easier to plug than high numbers or finer yarn. Also the finer yarns call for more floor area to be covered, and therefore more travel time must be considered.

But for filling yarns from 2s through 20s, the same formula can be used to figure the jobs; and similarly a formula that is used for 30s yarn can also be used for yarns up to 60s.

There are four factors that should be taken into consideration in figuring the workload: (1) the capacity of the battery, (2) distance between batteries and between lines of looms, (3) availability of filling, and (4) incidental jobs such as replenishing boxes or filling bags and cleaning waste from the thread holders.

A Formula Can Be Used

When the workload has been established, a simple formula figures the job layout for filling of any number within the predetermined limits.

There are two common methods that are used to determine how many batteries will constitute a standard workload:

1. One method uses the yards of yarn on an average bobbin, the width of the cloth, and the speed of the loom to determine the number of batteries.

2. The other method is also based on the running time of an average bobbin and is found by timing it in the loom with a stop watch.

To find the running time of a bobbin of filling when the weight and yarn number are known, use these formulas:

840 x wt. (in lbs.) x yarn No. = yds.

An average 8¾-in. bobbin contains 0 120 lb. of yarn; so for 10s yarn, the formula would be:

840 x 0.120 x 10 = 1,008 yds.

Known Yardage Makes Job Easier

Of course this formula need not be used if the spinning frame or filling winder puts a uniform known yardage on every bobbin.

If the batteryhand workload is 500 bobbins per hour and the yardage per bobbin is known, the formula is:

$$\frac{\text{Yds. per bobbin} \times 36 \text{ (ins. per yd.)} \times 500}{\text{Ppm.} \times \text{cloth width} \times 60 \text{ (mins.)}}$$

Example:

$$\frac{1{,}000 \times 36 \times 500}{160 \times 44 \times 60} = 42.6$$

The batteryhand jobload is 43 batteries.

To figure the jobload with a stop watch, four bobbins are timed in a loom that is running at standard speed. An average is taken of four bobbins to level out any variation in the yardage per bobbin.

As in the previous example, if yardage counters are used and all bobbins are uniform, it isn't necessary to get an average figure.

A constant can be worked out by dividing the standard workload by

CONTINUED ON PAGE 154

The Trouble Shooter at Work—

Variation in CARD SLIVER Is Traced to Bad Gearing

A maximum average variation of over 18% at the cards was hurting quality in a large cotton mill. A trouble shooter was called in, and he ran some spectrograph tests on a card selected at random. Results of the tests showed that most of the trouble was caused by—

- **Production gear assembly**
- **Gearing between doffer and calender-roll shaft**
- **Worn studs and bearings**

A LARGE COTTON MILL was having trouble with sliver evenness at the cards. Variation averaged from 18 to 20% for most of the cards in the mill.

This condition was reflected in all of the succeeding departments. The spinning-room overseer blamed the trouble on the boss carder; the boss carder blamed the trouble on the rain-damaged 1957 cotton. Tempers were growing short.

The mill did not have a quality-control department or modern testing instruments. So the management called in a trouble shooter to run down the causes of the bad-running work.

Variation Was 18.3%

The trouble shooter selected at random card No. 48 and ran a series of quality tests to find out why the average maximum sliver variation (Uster) was 18.3%.

The first step was to make a spectrogram chart on an electronic spectrograph machine. The curve showed major peaks at 8 and 24 ins. and at 1½ yds. (Fig. 1).

The 8-in. peak indicated that something might be wrong with the production-gear assembly. The 24-in. peak pointed up trouble in the gearing between the doffer and calender-roll shaft. The 1½-yd. peak indicated that the doffer was not running properly.

The generally high curve of the spectrogram gave a clue that studs and bearings might be worn and that there was too much play in the coiler gearing.

Mechanical Faults Show Up

With these indicators all pointing toward mechanical faults at the card, the trouble shooter practically dismantled card No. 48.

Here's what he found and did:

1. The production gear was worn out and very eccentric. A new gear was put on the card.
2. The switch gear needed new bushings, which were put in; and the gearing was cleaned and remeshed between the doffer and the cylinder.
3. The top calender-roll gear was loose on the shaft; the gear was tightened.
4. Loose bearings on the vertical shaft in the coiler post were tightened.
5. One coiler roll was loose on the shaft; the roll was repinned.
6. The bevel gears in the coiler were out of mesh; the gears were cleaned and meshed properly.
7. The doffer had too much end play for proper operation. Bearings were reset to remove the play.

CONTINUED ON PAGE 160

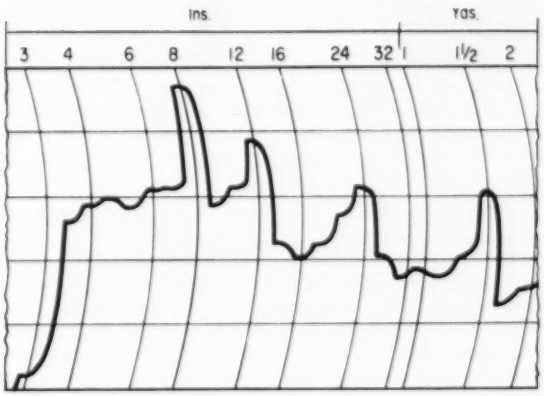


Fig. 1

CURVE PEAKS at 8 and 24 ins. and at 1½ yds. indicate trouble in various gear assemblies.

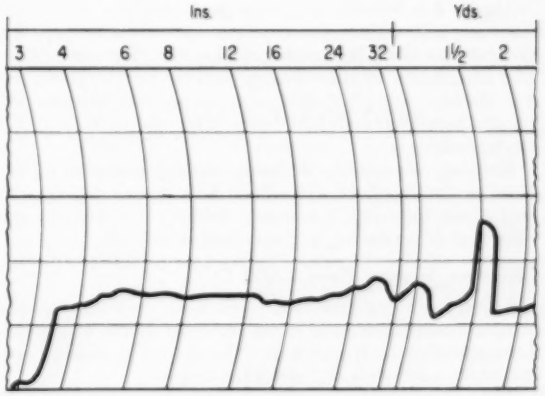
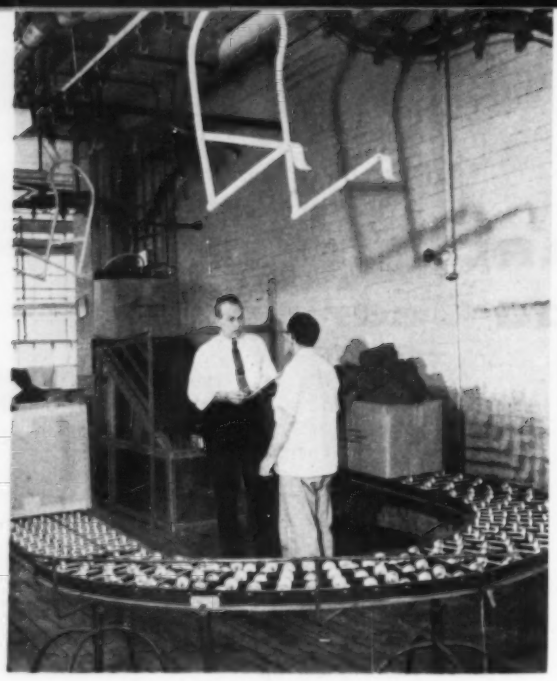


Fig. 2

REDUCED HEIGHT OF CURVE shows that defects were corrected and that tension variation is less.



◀ OVERHEAD CONVEYOR transports sweaters and swimwear through the mill. The descending carrier prongs strike a contact point, and the carton of cut goods slides down through the cage onto the gravity roller conveyor.

▬ TILT TABLES speed sweaters through seaming operations. These tables are arranged between the sewing machines and eliminate the need for cartons or trucks behind the operators.

New Ideas At Union Mills

BOOST KNITWEAR PRODUCTION

At Union Knitting Mills—

- An overhead conveyor system is doing the work of 10 men
- Tilt tables speed seaming operations
- A separating machine handles more work

Union Knitting Mills, Philadelphia, Pa., expanded its plant two years ago and has used many ideas that are saving the firm money and speeding goods through the plant. A conveyor system has been devised so that no person handles goods in process more than once.

The mill is located in a multistory building, and much time was lost waiting for elevators and in extra handling to move the work between operations and between floors. The installation of the conveyor system cost $10,000, but it is already saving $20,000 annually because 10 men previously handling materials have been diverted to direct productivity.

Knitting, separating, steaming, drying, and cutting are done on the top floor. The third floor houses the sweater operations, finishing, examining, folding, and boxing; and swimwear is produced on the second floor.

Conveyor System Runs 1,500 Ft.

The conveyor system runs 1,500 linear feet through the plant between floors and between departments at a maximum speed of 25 ft. per min. The system is divided into two units, each with its own separate cycle.

The upper unit services the fourth floor, dips down to the third floor to deposit goods for the seaming department, and returns to complete its cycle to the fourth floor. The lower unit services the third floor, runs down past the second floor to the ground-floor stock and shipping departments, and returns to the third floor.

SWEATER SEPARATING is now done by a machine that separates up to 100 doz. sweaters per day. The sweaters are processed in 1-doz. lots. The drum turns after the threads have been placed over the hook to separate the sweaters.

Both overhead units pick up and feed into inclined gravity-operated roller conveyors at certain locations where the chair-shaped two-pronged carriers of the conveyor strike contact points. There are two starter switches for the overhead conveyor at needed points on each floor.

The upper conveyor begins its cycle by picking up goods at the separating section and takes them to the steam table for presteaming. Goods are picked up after steaming and drying and are carried to the cutting tables.

CONTINUED ON PAGE 158

How To Predict ENDS DOWN From Small-Lot Tests

• Here's how ends down in large-scale spinning can be predicted with reasonable accuracy from the results of small-scale testing by using critical values. These values, based on a mathematical formula, are plotted on a chart to permit rapid evaluation of spinning performance.

By HENRY K. C. WOO
School of Textiles, North Carolina State College

Critical Values of End Breaks

No. of spindles	Breaks per 1,000 sp. hrs.	
	35 ends down	75 ends down
10	2.0	2.9
20	2.7	4.2
30	3.4	5.4
40	4.1	6.6
50	4.7	7.6
60	5.2	8.8
70	5.8	9.6
80	6.3	10.7
100	7.3	12.6
150	9.7	17.3
200	12.0	21.8

CRITICAL VALUES were worked out mathematically and can be used as a guide to judge spinning performance as described in the text.

AFTER PRECAUTIONS HAVE BEEN TAKEN to eliminate all end breakages from assignable causes, it is the general opinion that an end-breakage rate of 35 ends down per 1,000 sp. hrs. is acceptable in most mills.

In conducting an end-breakage test on a limited number of spindles, the results cannot be directly related to actual mill conditions without proper interpretation.

Here is a method for translating end-breakage values for a limited number of spindles into breaks expected for a larger number:

From a paper presented at the 1958 Cotton Research Clinic, Pinehurst, N. C.

When the probability of the occurrence of an event is small and the number of occurrences at given time intervals is independent of any other interval, it can be shown that the probability of x occurrences in a given time interval follows the Poisson distribution theory. The formula is:

$$f(x) = e^{-m}\frac{m^x}{x!}$$

Where: m is the true mean number of occurrences of a random event at given time intervals and x is the number of end breaks.

In the process of spinning, it is assumed that practically all end breakages occur between the nip of the front pair of drafting rolls and the bobbin. If this distance averages 14 ins. on a conventional spinning frame with a 1-in. front roll turning 150 rpm., there are approximately 20,000 such 14-in. lengths subject to chances of break each 10 sp. hrs. Since the number of ends down is small, the probability of occurrence of the number of ends down for a given number of spindles should follow the Poisson distribution theory.

Critical Values Are Found

An end-breakage rate as high as 35 breaks per 1,000 sp. hrs. is considered acceptable by many spinning mills. An end-breakage rate between 35 and 75 per 1,000 sp. hrs. is considered to be fair for some work. Breaks beyond 75 per 1,000 sp. hrs. produce unsatisfactory spinning.

Critical values are the number of ends down for a given number of spindles per hour that satisfies the Poisson equation.

The critical values for various numbers of spindles having 35 and 75 ends down per 1,000 sp. hrs. are shown in the accompanying table. These critical values can be used as a guide to judge spinning performance.

How To Use the Table

For example, suppose an experimenter was observing the number of ends down per 50 spindles per hour. If at the end of the period he observed eight ends down, which exceeds the critical value of 4.7 for 35 ends down per 1,000 spindles per hour, it may be concluded that in actual mill operation he would have an average number of ends down higher than 35 per 1,000 sp. hrs.

The accompanying chart can be used by laboratories in predicting ends-down performance in large-scale spinning.

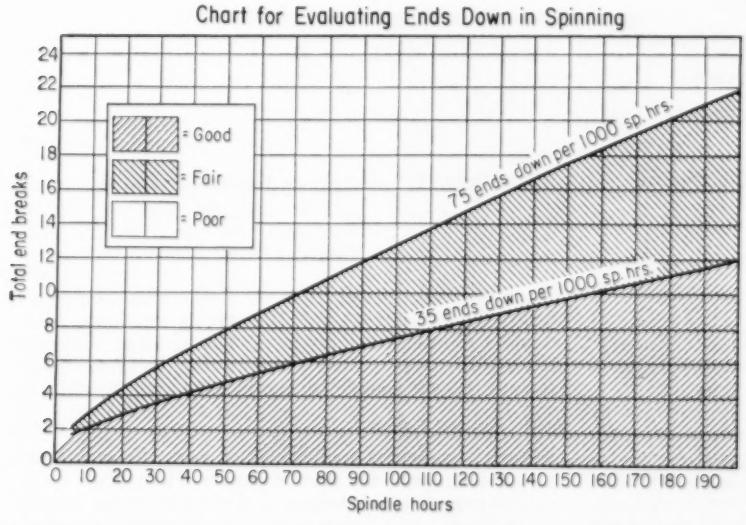
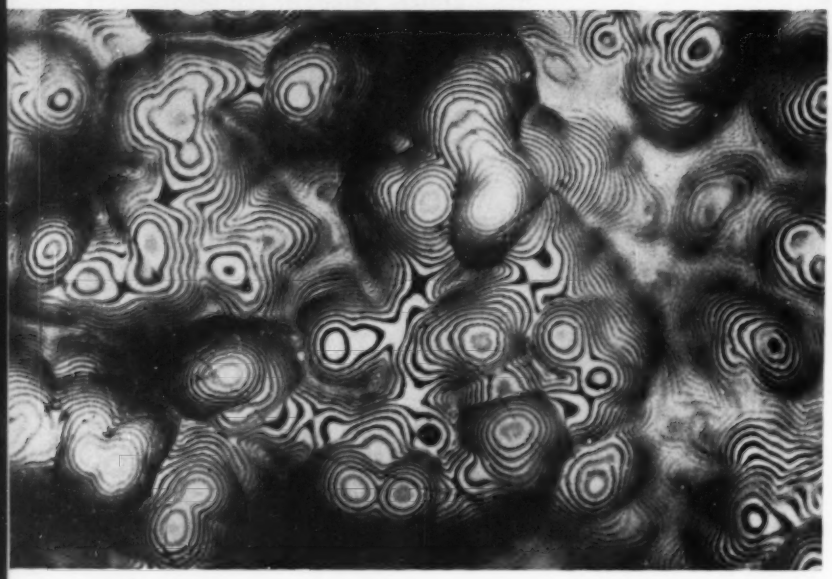


Chart for Evaluating Ends Down in Spinning
Total end breaks
Spindle hours
= Good
= Fair
= Poor
75 ends down per 1000 sp. hrs.
35 ends down per 1000 sp. hrs.
0 2 4 6 8 10 12 14 16 18 20 22 24
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

CURVES show critical end-breakage values plotted against total end breaks. If the number of ends down for a given number of spindles exceeds the critical value, poor-running work will result.



SMOOTHLY ROUNDED CONTOURS typical of matte-finish surfaces are shown in this Zeiss "Interferogram." Coefficient of friction here is $f_K = 0.14$, compared with $f_K = 0.7$ before the metal was matte finished.

Matte-Finish Metal
CUTS FIBER FRICTION 50%

Processing problems caused by high fiber-to-metal friction can be minimized by sandblasting and plating metal guide surfaces. This treatment will reduce—

- **Coiler-tube chokes**
- **Sliver dumping and distortion**
- **Fly and lint tag-ups**
- **Lap-ups at spinning**

By GEORGE R. BOLLINGER, Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc.

THE USE OF LOW-FRICTION CONTACT SURFACES has long been a standard practice in the textile processing of continuous-filament yarn. Basic yarn producers, throwsters, and weavers find this kind of protection necessary to guard against filament breakage and scuffing damage.

One type of low-friction metal surface is obtained by matte finishing. This process consists of sandblasting the surface and plating it with a protective layer of chrome.

Matte-finishing technology recently has been applied to selected staple-processing equipment, and test results indicate that the finish may offer as much to the staple processor as to the filament mill.

In the development program, matte finish was initially employed to reduce coiler-gear choking and sliver dumping. This work showed that the finish offers important quality improvements and labor-saving efficiency. For example, the finish reduces coiler choking 50 to 75% and in many instances entirely overcomes the problem. Sliver dumping can be completely eliminated by this finish.

Mills Accept Finish

Other commercial applications of matte finish include sliver guides, flyers, and tension devices. Here, matte-finish surfaces provide less distortion of slivers and roving, less fly accumulation, and better tension uniformity. All these applications have been accepted by a number of staple-yarn mills handling the newer man-made fibers.

The testing program demonstrated the effectiveness of

Processing Problems Minimized by Matte Finish

Textile operation	Machine part	Processing problem
Carding	Coiler-tube gear	Coiler-tube chokes
Drawing	Coiler-tube gear	Coiler dumping sliver from cans
Pin drafting	Coiler-tube gear	Sliver distortion
Gilling	Coiler-tube gear	Poor build in cans
Drawing	Sliver lifter	Sliver distortion
Gilling	Upright fingerguide	Fly and lint that cause slubs
Pin drafting	Spoon guide	Tag-ups
Roving	Flyer	Fly and lint that cause slubs; flyer-arm chokes
Spinning	Pencil roll	Lap-ups that cause ends down; lint accumulation
Winding, quilling, warping, and twisting	Tension post, tension disk, and pigtail guide	Fly and lint accumulation; variable tension

TEXTILE OPERATIONS where matte-finish guide surfaces have been field tested are listed here. The finish, used successfully with filament-yarn machinery, can now be applied to staple-fiber machinery.

the finish on machines running the newer man-made fibers in 100% mixes and in blends with cotton, wool, rayon, and acetate. Equal success was observed on the cotton, filament-rayon, and worsted spinning systems.

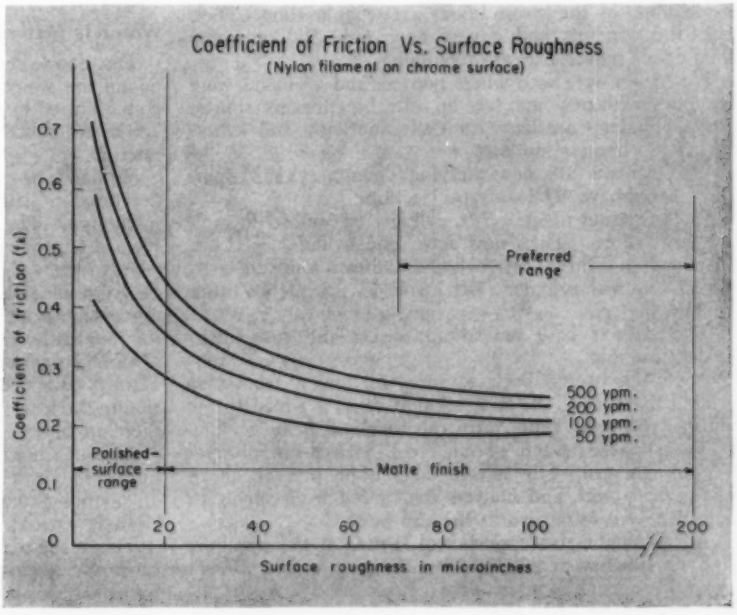
Some typical processing problems, the textile operation involved, and the machine part that can be matte finished are listed in the accompanying table.

Surface Is Changed

Procedure for matte-finishing machine parts is not different from that commonly employed by machine shops and commercial platers. The technique involves changing the metal surface from a mirror-like polish to a bright, shiny, smoothly pitted finish. The treatment is reasonably low in cost, and the finish is durable to normal exposure.

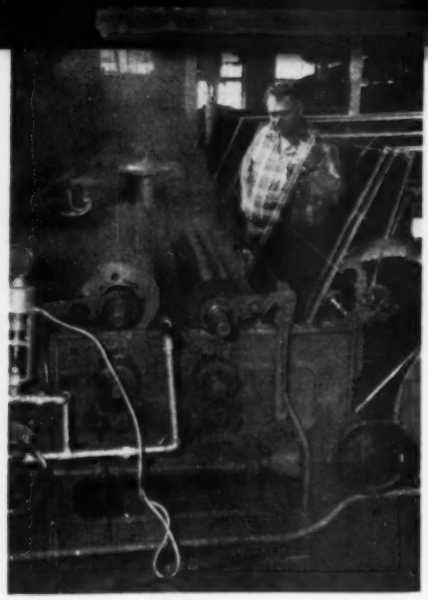
The degree of improvement obtained by matte finishing depends upon its ability to reduce the coefficient of friction. This ability is shown graphically in the accompanying chart.

Surface finishes in the preferred range have 30 to 50% of the friction of polished surfaces. The chart also shows that the friction of polished surfaces varies greatly with fiber speed, whereas the friction of matte-finish surfaces is only slightly changed with variations in yarn speed.



FRICTION OF POLISHED SURFACES varies more with fiber speed than does the friction of matte-finish surfaces. In the preferred range, friction is 30 to 50% less for the matte finish.

◀ LOOMS were converted from 36- to 44-in. width, and many improved parts were added.



SQUEEZE ROLLS weigh 550 lbs. each. The back roll is rubber-covered, and ▶ the finisher roll has a yarn cover.

Avondale Changes Machinery To Produce

WIDE DENIMS

• At its Pell City Plant, Avondale Mills has widened looms and increased slasher drying capacity to produce denims of any weight in widths to 44 ins. Here's what Avondale did—

At its Pell City Plant, Pell City, Ala., Avondale Mills has modernized the weave room and slasher room. In the weave room, 312 X-model looms were converted from 36- to 44-in. width. Warp-yarn-beam heads on these looms were changed from 24- to 28-in. dia.

Work on the looms was done in the mill. Looms were moved out of the weave room a few at a time. Then electrical conduits and a new floor were laid, and the looms were moved back for rebuilding.

New parts were used where needed; and all looms were equipped with new lays, take-up rolls, breastbeams, shuttle boxes, binders, auxiliary camshaft motions, and clock-spring top harness motions.

These looms are now weaving denims at 172 ppm. Loomfixers have 89 looms per section.

In the slasher room, a 7-ft. cylinder was added to each of the slashers. They now have one cylinder 5 ft. in diameter and three 7-ft. cylinders. Steam pressure is 6 psi. in the first cylinder (7-ft.) and 13 psi. in the other three cylinders.

The slashers have multimotor drives and run 40 to 65 yds. per min.

A rubber-covered back squeeze roll and a wool-yarn-wound finisher roll are used. A new cover is added to the finisher roll every shift. Each roll weighs 550 lbs.

The slashers have five-beam creels with a special creel for selvage yarn. The selvage creel is on a track above the regular creel, and undyed yarn is fed from spools to join the dyed warp yarn at the size box.

An automatic size-level control is used at the size box, and temperature regulators keep the size at 206° F. A moisture control regulates slasher speed for 8% regain.

Size pickup is 10.5%, and yarn stretch is 1.5%.

Section beams have 32-in.-dia. heads, and warp-yarn beams have 28-in. heads. A section beam holds 9,500 yds., 531 ends, of 9.6s warp yarn. Warp-yarn beams hold 1,300 yds., 2,700 ends, of the 9.6s yarn.

Size preparation has been brought up to date with a bulk-starch-handling system and homogenizers.

Pellet pearl starch is used, and a 4,000-lb.-capacity storage tank in the slasher room is connected to an outside silo. Silo capacity is 135,000 lbs., and starch is blown from it to the storage tank as needed.

Size is brought to a boil in the 350-gal. cooking kettles, held for 10 mins. at 210° F., and homogenized at 2,000-psi. pressure. Temperature of the storage kettle is kept at 210° F.

Water Is Metered

The size is carefully prepared. Starch and sizing compound are weighed, and water is metered. Open steam coils are used to cook the size, but the coils in the storage kettles are closed to prevent condensate from diluting the mixture.

No hoods or exhaust systems are needed for the slashers because the plant is built all on one floor with skylights in the roof. The slashers are located so that the heat and steam from the cylinders and size boxes are drawn through vents in the skylights.

Overhead rails and hoists handle the beams. There is one operator per slasher; and there's one helper, back man, for four slashers.

With its improved weaving and slashing, the Pell City Plant is equipped to produce all types of denim. In addition to the looms that have been converted to 44-in. width, there are also 392 looms 40 ins. wide.

Although the improvements have not given the mill any more productive capacity in linear yardage, the number of pounds produced has been increased because wider cloth is woven.

The modernization work has made many of the jobs easier and has resulted in labor savings. The quality of warps and finished cloth has also been improved.

Textile World

CHEMICAL TREATMENT AND FINISHING

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Whatever the Application, SEE SANDOZ FOR VATS!

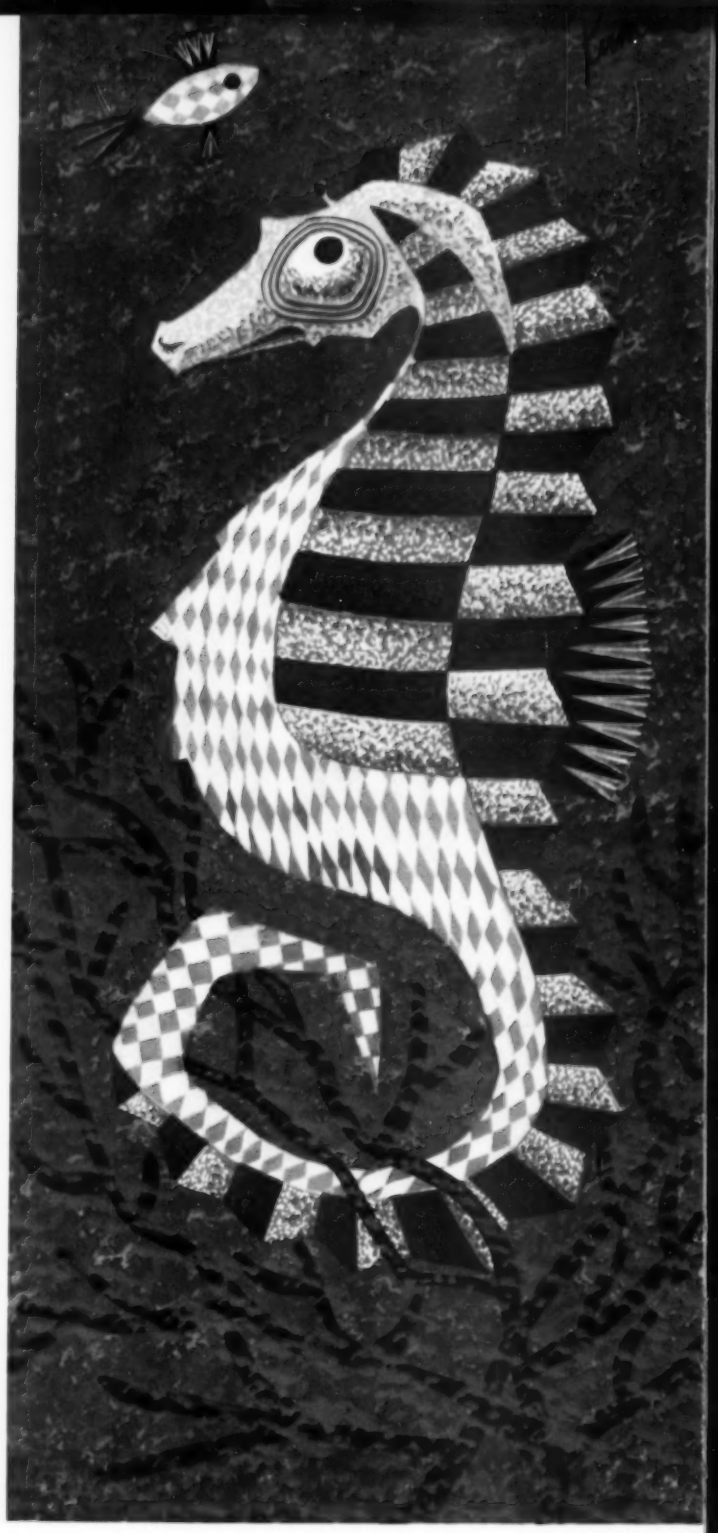
Versatility in vat colors is a must. That's why SANDOZ has the correct vats for every use—pigment padding, package dyeing, printing.

More specifically, take pigment padding. Here a special selection of Sandothrene "M" colors is our newest development. With these Sandothrene "M" vats, dye migration is becoming a thing of the past. When SANDOZ Sandothrene "M" vats are padded, they stay where you want them!

For package dyeing, Sandothrene Ultrasperse® dyes have been proved time and again, in chromatographic tests and in practice, to offer the finest particle size, plus freedom from agglomerates.

For printing—here again, SANDOZ has the answers. Sandothrene Ultrasperse Printing vat colors have the extreme fineness of particle size to facilitate flow with good running qualities, and greater freedom from roller scratch.

In fact, whatever your application problem—we are in a position to help you solve it. Just 'phone or write SANDOZ, INC., 61-63 Van Dam Street, New York 13, N. Y. ALgonquin 5-1700.



SANDOZ

THINKS AHEAD WITH TEXTILES

SANDOZ

Emulsions Help Pad Dyeing—

Dyers can take a tip from printers when they try to pad-dye hydrophobic-fiber fabrics. In padding these materials, it is literally impossible to remove excess surface liquor in an ordinary pad; and the floating dye liquor produces uneven results.

It has been found possible quite recently to apply metal-complex dyes from an oil-in-water emulsion to filament nylon fabrics by padding. The oil phase carries the dye, and the water phase carries the acidic fixing material. The viscosity of the emulsion prevents premature migration of the color.

When the goods are subsequently steamed, the emulsion breaks and the dye goes onto the fabric evenly and the dyeings have good fastness.

Soap Makers Get Tips—

Soap and detergent makers got some suggestions on how to improve their products at the 32nd Annual Convention of the Association of American Soap and Glycerine Producers held in New York recently.

H. C. Borghetty and G. M. Gantz of General Aniline & Film Corp. urged soapmakers to develop a number of new items for textile processing. Some of the needs cited were:

- Products that have improved soil-suspending qualities for laundering Dacron-cotton blends.
- Better and longer-lasting static-reducing compounds that can be applied in the last rinse.
- Detergents that are more efficient in removing grease from man-made-fiber fabrics and that will work well in cold, warm, or hot water.
- Improved brighteners or an increase in the concentration of brighteners now supplied in household detergents. This suggestion is based on the fact that resin-treated cottons pick up only about 25% as much brightener as do plain-finished goods.

Another suggestion, offered by Andrew J. Gard of Dow Chemical Co., was to incorporate chelating agents in soaps that would prevent the formation of insoluble soap curds with hard water. A suitable chelating agent for the purpose is ethylenediamine tetra-acetic acid (EDTA).

Warner M. Linfield of Armour & Co., prophesied the increasing use of mixtures of soap, detergent, and sequestering agents that would combine the best features of each material and do so at a reasonable cost.

A new line of amphoteric surfactants called Deriphats [Textile World, Feb. '59, p. 76] was described by A. J. Freeman, General Mills Chemical Div. These products have widely varying performance characteristics that are dependent on the pH of solutions. At a high pH, they are excellent detergents with high foaming ability. At lower pH, the products are useful as dyeing assistants and softeners.

New Carriers Help Dye Pickup—

In addition to well-known carriers such as orthophenylphenol, methyl salicylate, and diphenyl, researchers have come up with several cyclo-hexylphenols that increase dye pickup on triacetate, polyamide, and polyester fibers up to four times above the amounts that are absorbed without carriers.

Examples of the new chemicals are para-cyclohexylphenol, para-methyl- and dimethyl-cyclohexylphenol, and para-bornyl-cyclo-hexylphenol. The compounds are added to the dyebath at the rate of 1 to 2 gpl.

New Nonresin Wash-and-Wear Process—

Hard on the heels of Deering-Milliken's Belfast comes Research Project X from Jos. Bancroft & Sons Co. Described as a process that modifies the cotton fiber chemically, the new development is claimed to provide a soft, nonirritating hand and good wrinkle recovery on wet or dry goods.

W. R. McIntyre, Bancroft president, states that fabric treated by the process is more compatible

with resin aftertreatments than normal cotton. When treated goods are resin finished, the X-processed fabrics have a wet resilience and crease recovery as good as the dry fabric. Further, resin aftertreatment of X-processed goods does not lower tensile strength appreciably.

Added features include launderability by any usual method, improved dimensional stability, increased resistance to soiling, and no chlorine-retention problem.

The X-process is claimed to increase the life of the fabric, and the effects are permanent. Water absorption is reduced so that treated cotton fabrics dry 30% faster than untreated goods.

Buck Sour Speeds Continuous Bleaching—

The newest development in the British process of continuous solvent degreasing and peroxide bleaching of cotton goods [TEXTILE WORLD, Mar. '58, p. 115, and Oct. '58, p. 95] is to prebleach the degreased goods in an acid-hypochlorite bath containing 2 to 5 gpl. available chlorine at pH 4.5 or lower. The goods are then rinsed and padded with an alkaline peroxide solution and steamed as usual. The buck-sour step permits greater latitude of time and temperature in the total operation and does not increase the risk of tendering the goods (British Patent 806,536).

New Process Eliminates Odors—

Both free-formaldehyde and fishy odors in resin-finished goods are inhibited by a process developed by West Point Mfg. Co., West Point, Ga.

Called X-O, the process is effective on all types of resin now being used to produce wash-and-wear finishes. Details of the treatment are not available as yet but apparently include the addition of a base carrying an HSO_3 radicle to the last rinse box of an afterwasher or in combination with top-finishing materials in a pad.

The process is patented and will be licensed to finishing plants.

Higher Urea Content Improves Print Pastes—

British researchers have found that if the amount of urea included in print pastes is substantially increased, the steaming or ageing process can be sidetracked and a simpler heating process can be substituted to develop the color.

In the new process, the urea is mixed with melting-point depressants such as thiourea, ethylene glycol, or dicyandiamide. Then sufficient urea or urea mixture is added to the print paste so that when the printed goods are baked at a temperature between the melting point of the urea or urea mixture and 160° C., the dyes become dissolved in the urea.

The results are better fixation and better penetration of color in the fabric.

The process can be applied to acetate, triacetate, polyester, and polyamide fibers as well as cotton and wool. Suitable dyes can be selected from disperse, solubilized vat, direct, acid, and premetallized dyes (British Patent 804,120).

New Light on Dye Carriers—

Facts are gradually replacing theories in regard to how carriers help get dye into hydrophobic fibers.

Dr. V. S. Salvin, Celanese Corp., reported to AATCC members recently that all carriers have the common property of being absorbed by the fibers to be dyed and that up to 40% of the carrier actually enters the fiber.

Carriers also are excellent solvents for dye, being able to carry anywhere from 10 to 20% of dye in solution.

Carriers swell the hydrophobic fibers, and it may be this action that accounts for the greater absorption of dye. It has been found that a carrier should be soluble in water to be most effective. The carrier goes from the water phase into the fiber, rather than being directly absorbed by the fiber.

Henry E. Millson of American Cyanamid showed films illustrating the action of a carrier in a dyebath containing a single fiber. The dye-laden carrier attaches itself in droplets to the fiber, but no local over-dyed areas develop. As time and temperature increase, the dye first aggregates, then disperses evenly in the fiber. This action disproves earlier theories that the fiber is dyed from a film-like concentration of dye dissolved in carrier at the fiber surface.

Logwood Dyes Triacetate Fibers—

One of the oldest natural dyes can be applied to one of the newer man-made fibers by a patented method developed by Courtaulds Ltd.

Triacetate yarn or fabric is first treated for 2 to 3 hrs. in a slightly acidified liquor containing the logwood extract and a small amount of a swelling agent such as methyl ethyl ketone or diethyl phthalate.

The goods are rinsed after this treatment and the nearly colorless logwood extract is laked or developed in a bath containing potassium bichromate, acetic acid, and sodium chloride. The development is started at 30° C. and is raised to 95° C. to complete the process. The shade produced is a deep bluish black that has good fastness to washing and light.

Did You Know . . .

. . . that tris (1-aziridinyl) phosphine chloride, called APO for short, and originally developed as a flame retardant, is creating considerable interest as a wash-and-wear finishing material? The product was developed at Southern Regional Research Laboratories of the U. S. Dept. of Agriculture.

Although at present too costly, the material imparts to cotton excellent and durable crease resistance with no chlorine-retention problem and only slight changes in hand.

■

. . . that you can prevent nylon from yellowing under heat treatment? U. S. Patent 2,823,093 (Rohm & Haas) states that by treating nylon with urea, biuret, dicyandiamide, or ammonium cyanate so that at least 5% of material is deposited on the nylon and then heating the fabric to 240° F., the fabric will not discolor during further heat treatments. The same effect can be obtained by treating the nylon in an aqueous solution containing approximately 15% by weight of one of the above materials at 90 to 150° C. (U. S. Patent 2,823,094, Rohm & Haas).

•

. . . that you can overcome the tendency of polyvinylpyrrolidone to yellow acrylic fibers? When PVP is used to boost the dye pickup of fibers based on polyacrylonitrile, heat and light may cause yellowing of the fiber as an undesirable side effect.

Dow Chemical Co. has patented a method of treating polyacrylonitrile fibers with polyvinylpyrrolidone in the presence of zinc formaldehyde sulfoxylate that produces a more-dyeable fiber with greatly improved resistance to yellowing. The reducing agent slows down the decomposition of the PVP. The treatment is regulated so that the fibers contain up to 10% PVP and 0.5 to 5.0% of zinc formaldehyde sulfoxylate.

•

. . . that certain acid dyes are extremely sensitive to the sodium perborate now contained in some soap powders that are widely used in the home? Consumers who wash woolen goods dyed in whole or part with acid blues of the C. I. Acid Blue 83 type may find that if they wash at 140° F. or higher, an irreversible color change to a green shade will occur.

•

. . . that man-made fibers with a scale-like surface similar to wool can now be produced? According to U. S. Patent 2,866,256, granted to N. A. Matlin and assigned to Rohm & Haas, certain thixotropic emulsions of linear thermoplasts can be spun under conditions of rapidly varying pressure so that a serrated surface results. The fibers may be based on vinyl compounds, acrylonitrile, or the

esters of various acids such as acrylic acid, methacrylic acid, itaconic acid, and others that will form copolymers with aliphatic or arylalipathic alcohols that have from 1 to 18 or more carbon atoms.

•

. . . that ethyl alcohol can be used to get two-color effects in the vat dyeing of cotton-acetate fabrics? If such a fabric is dyed at 40° C. in a weakly alkaline bath that contains equal parts of vat color and a 70% solution of ethyl alcohol, the acetate will dye strongly while the cotton remains practically undyed. The effect is due to the swelling action of alcohol on acetate fibers and a depression of the swelling of cotton fibers. To get cross-dyed effects, the cotton can be dyed a contrasting color in a following bath that does not contain alcohol.

NEW DYES AND CHEMICALS

Identifying Dyes

Neocarmine . . . is supplied in a series of solutions, each of which is suitable for the identification of a group of fibers in the animal, vegetable, or man-made categories. The line has recently been extended so that many of the newer man-made fibers can be identified. Sample fabrics, color charts, and detailed procedures for using the dyes are available. F. F. Kraus Co., 136 Liberty St., New York 6, N. Y.

Circle D-1 on Reader-Service Card

Vat Dye

Cibanone Gray BG Paste . . . is a level-dyeing, extremely small particle-size dye that is of particular interest for beam or package dyeing as well as for piece goods.

The color produces a medium-gray self shade that is fast to light and washing and is not affected by many types of resin finishes. Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.

Circle D-2 on Reader-Service Card

Vat Dye

Calcoloid Brill. Orange RK Single Paste . . . dyes cellulosic fibers a very bright reddish-orange shade that has very good fastness to sun and weathering. The color does not accelerate tendering during prolonged exposure to sunlight. Other properties include excellent over-all fastness, good unions between cotton and rayon in blends, and ability to reserve acetate when dyed by suitable procedures.

The dye prints satisfactorily by regular, flash-ageing, or emulsion methods. American Cyanamid Co., Dyes Dept., Bound Brook, N. J.

Circle D-3 on Reader-Service Card

Dye Carrier

Dacrol 506 . . . produces even dyeings on polyester-fiber fabrics and does not tend to develop spots. The carrier is readily dispersible in water and is completely nontoxic. Eastern Color & Chemical Co., 35 Livingston St., Providence 4, R. I.

Circle D-4 on Reader-Service Card

Polyethylene Emulsion

PE-50 . . . is a finely dispersed polyethylene emulsion that is compatible with most textile-finishing materials. The product provides softening and lubricating qualities to resin finishes as well as an antistatic finish to natural- and man-made-fiber fabrics. Chemical Products Corp., Jackson Lane, W. Paterson, N. J.

Circle D-5 on Reader-Service Card

Aftertreated Dye

Cuprofix Yellow C-2RLN p.a.f. . . . gives bright, reddish-yellow shades when aftertreated with copper complexes or copper sulfate. Washfastness of the dye is very good, and resistance to perspiration is exceptionally good. The color does not change shade or lose lightfastness from resin finishing and may be combined with all Cuprofix C-type dyes. It reserves acetate. Sandoz, Inc., 61-63 Van Dam St., New York 13, N. Y.

Circle D-6 on Reader-Service Card

Purified Catalysts

Zimcor . . . brands a process that produces purified catalysts of the type that is used in curing resin finishes. Fabrics finished with resins catalyzed with these products are claimed to have better tear strength and no odor. The finishes are nonchlorine retentive and do not require afterwashing. Zimmerman Associates, Box 265, Guilford College, N. C.

Circle D-7 on Reader-Service Card

Neutral-Dyeing Black

Neonyl Black JT . . . dyes truly jet-black shades on nylon by neutral-dyeing methods. The color has the same dyeing and fastness properties of Neonyl Black W but produces a shade of black that is more suitable for many purposes. Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.

Circle D-8 on Reader-Service Card

Textile Finishers in Strong Business Swings

Latest government figures show—

- The Southeast's domination of chemical-treatment and finishing business grows strcnger
- But New England is fighting back in man-made-fiber finishing
- The Middle Atlantic states are losing all around

TEXTILE FINISHERS IN THE SOUTHEAST got a bigger bite of the total finished-goods market in the rough textile year of 1957, according to latest Bureau of the Census figures.

In a year that witnessed a 4.5% decline in total cotton, man-made-fiber, and silk goods finished, finishers in the Southeast held their loss to only 2.2%, which raised their share of total goods finished from 46% in 1956 to 47.3% in 1957.

In 1956, finishers in the South turned out 4,730,299,000 yds., out of a U. S. total of 10,244,543,000 yds.

In 1957, total yardage dropped to 9,776,113,000 yds. Of this total, the South handled 4,623,242,000 yds.

Other areas fared worse.

While the South was holding its loss from 1956 to 1957 to 2.2%, New England dropped 5.8%, the Middle Atlantic states 9.3%, and All Other areas 3.0%.

In number of finishing plants (1958) and total yardage finished (1956 and 1957), here's how the different areas compared:

Area	% of U. S. Plants	% of total yds. 1956	% of total yds. 1957	% Change
New England	22%	24%	24.0%	—
Middle Atlantic	35	19	17.8	−1.2
Southeast	26	46	47.3	+1.3
All Other areas	17	11	10.9	−0.1
	100%	100%	100.0%	

As shown here, New England held its own in share of total market. The big loser was the Middle Atlantic states, which dropped 1.2% of the 1.3% gained by the South. All Other areas lost the other 0.1%.

New England Licks the Trend

One of the most significant things that's taking place in the over-all finishing picture is New England's performance in man-made-fibers and silk finishing.

As shown in the table "Goods Finished: 1957 vs. 1956" on page 75, in a year of declining business both in total finishing and in man-made-fiber and silk finishing, New England racked up an 11.3% gain in the latter category.

While total yardage of man-made-fiber and silk finishing dropped 97,215,000 yds. in the U. S. from 1956 to 1957, New England gained 53,927,000 yds. and raised its share of this market from 21.8% of the total in 1956 to 25.4% in 1957.

This gain was entirely at the expense of the Middle Atlantic states and the Southeast. All Other areas also showed a gain—a whopping 59.7%, but in actual yardage only 43,547,000 yds., against New England's gain of 53,927,000 yds.

How the Market Is Distributed

Cotton finishing, with 7,705,487,000 yds. in 1957, accounted for 78.8% of the total yards finished. Man-made fibers and silk, with 2,070,626,000 yds., accounted for the other 21.2%.

Here's how the business was distributed in 1957:

	% of total
Cotton	78.8%
New England	23.7
Middle Atlantic	8.8
South Atlantic	55.2
All Other areas	12.3
	100.0%
Man-Made Fiber and Silk	21.2%
New England	25.4
Middle Atlantic	50.9
South Atlantic	18.0
All Other areas	5.7
	100.0%

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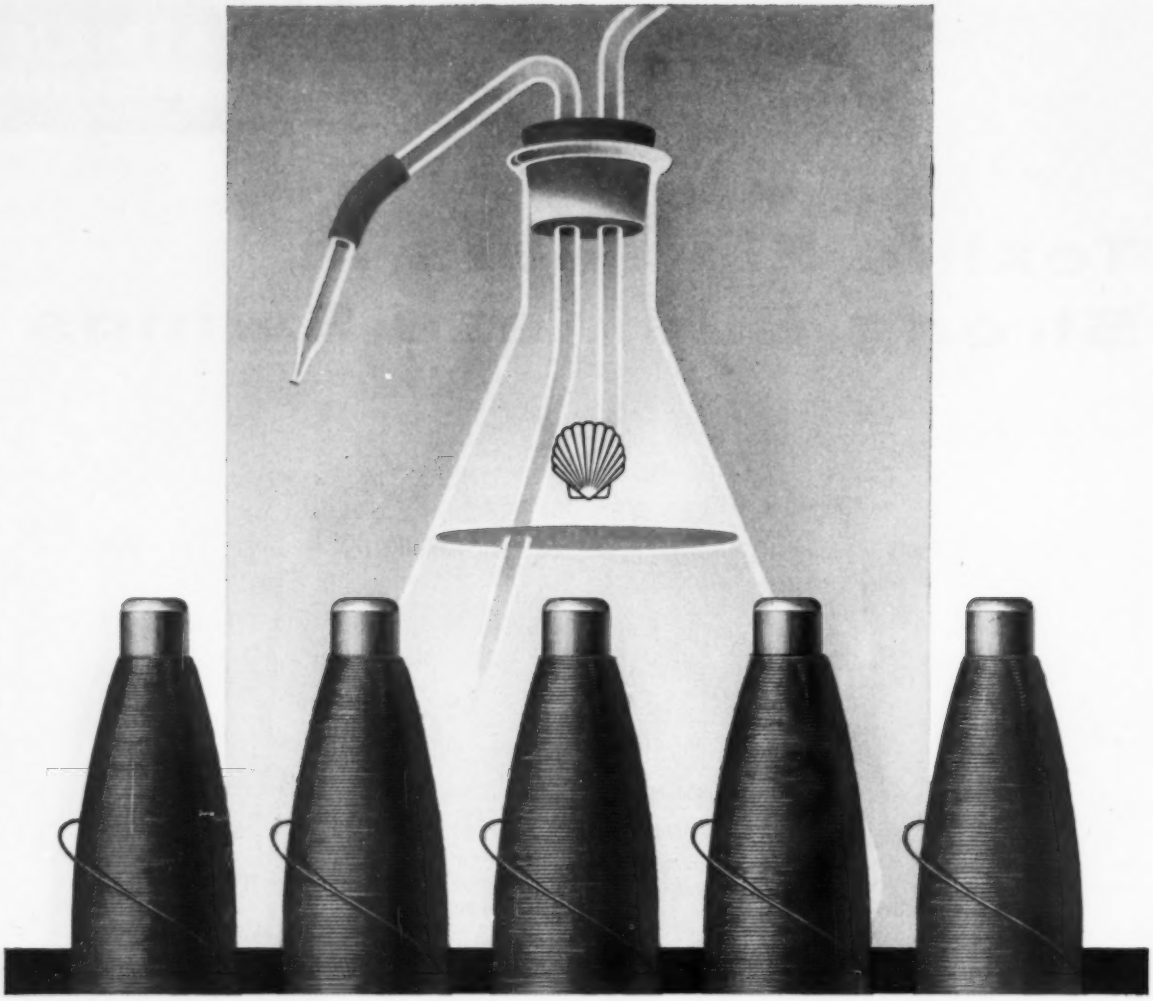

How Shell Chemical serves the textile industry

Chemicals play a vital role in the textile industry. Having the right chemical for the job helps produce *better* fabrics. Shell Chemical is a convenient, dependable source for the chemicals listed at the right.

Hydrogen peroxide serves as a rapid, economical bleach and as an oxidizer for making vat colors brighter. Acetone is a spinning solvent for acetate rayon. Glycerine is a popular moistening agent for fibers and for textile printing compositions.

Eponite® 100 is a very effective, non-chlorine retentive resin for production of minimum-care fabrics. It imparts increased wrinkle resistance to cottons and rayons and reduces rayon shrinkage to a fraction of one per cent.

• • •

A Shell Chemical representative will be glad to discuss your specific needs. Write your nearest Shell Chemical district office for samples and technical literature.

Acetone
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Goods Finished: 1957 vs. 1956

	1956	1957	Change
All goods finished	**10,244,543,000**	**9,776,113,000**	**– 4.5%**
Cotton goods	**8,076,702,000**	**7,705,487,000**	**– 4.5**
New England	2,025,401,000	1,822,969,000	– 9.9
Middle Atlantic	707,372,000	681,593,000	– 3.6
South Atlantic	4,316,201,000	4,250,490,000	– 1.0
All Other areas	1,027,728,000	950,435,000	– 7.5
Man-Made Fiber and Silk	**2,167,841,000**	**2,070,626,000**	**– 4.6%**
New England	473,091,000	527,018,000	+11.3
Middle Atlantic	1,207,734,000	1,054,391,000	– 5.0
South Atlantic	414,098,000	372,752,000	–11.0
All Other areas	72,918,000	116,465,000	+59.7

As these percentages show,

- Over three-quarters of total finishing is accounted for by cotton.
- Over half the cotton finishing is done in the South.
- Over three-quarters of cotton finishing is done in the South and New England.
- One-half of all man-made-fiber and silk finishing is done in the Middle Atlantic states.
- Three-quarters of all man-made-fiber and silk finishing is done in the Middle Atlantic states and New England.
- Only New England does about an equal percentage share of both cotton finishing and man-made-fiber and silk finishing, with the South heavy in cotton and light in man-made fibers and silk but increasing its share in both, and the Middle Atlantic states heavy in man-made fibers but light in cotton and losing both.

Nine-Year Trend

Man-made-fiber and silk finishing seem to be at a standstill, at least for the present.

The table "Nine-Year Trend" shows that from 1948-1957 man-made-fiber and silk finishing gained only 0.4%, compared to a gain of 10.0% in cotton finishing.

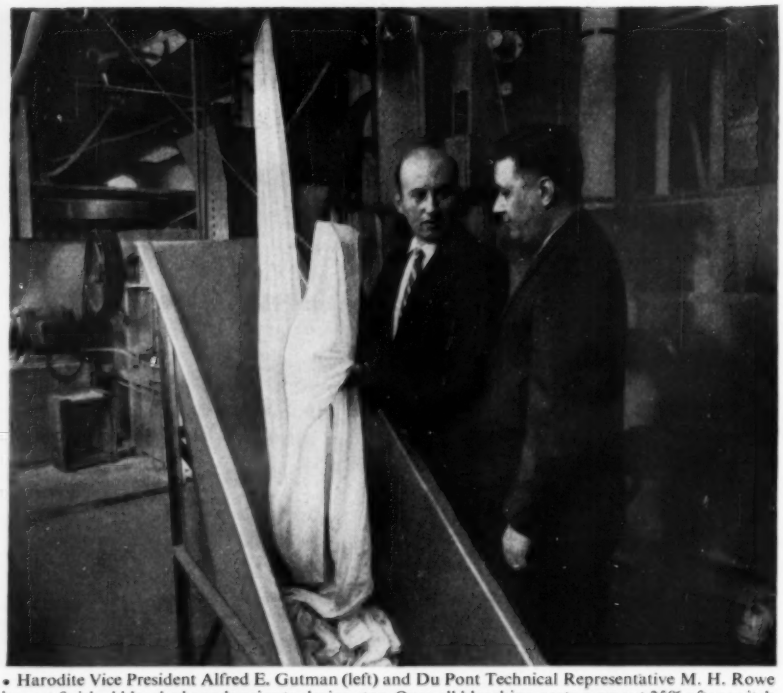
This lack of growth by man-made fibers and silk accounts in part for the unfavorable finishing-business conditions in the Middle Atlantic states.

In the nine years, plants in these states suffered a drop of 29.7% in cotton finishing and 23.6% in man-made-fiber and silk finishing. In this period, these states alone lost in their percentage of the total market. All the other sections made big gains, ranging from 23.9% in New England to 93.9% in All Other areas.

Nine-Year Trend

	1948	1948 to 1957 Change
All goods finished	**8,840,437,000**	**+10.0%**
Cotton goods	**6,779,692,000**	**+13.6**
New England	2,218,490,000	–17.6
Middle Atlantic	969,390,000	–29.7
South Atlantic	2,678,880,000	+58.6
All Other areas	912,932,000	+ 4.1
Man-Made Fiber and Silk	**2,060,745,000**	**+ 0.4%**
New England	425,387,000	+23.9
Middle Atlantic	1,380,942,000	–23.6
South Atlantic	194,358,000	+81.7
All Other areas	60,058,000	+93.9

Another mill converts to Du Pont's exclusive Solo-Matic Bleaching Process...



• Harodite Vice President Alfred E. Gutman (left) and Du Pont Technical Representative M. H. Rowe inspect finished bleached goods prior to drying step. Over-all bleaching costs were cut 25% after switch to Du Pont Solo-Matic Hydrogen Peroxide Bleaching Process.

Harodite Finishing Company doubles production ...cuts over-all bleaching costs 25%

Latest addition to the growing list of mills profiting with the Du Pont Solo-Matic Bleaching Process is the Harodite Finishing Co., N. Dighton, Mass.—well-known producer of cotton goods.

Harodite reports a 100% increase in production with no increase in labor or utilities costs, and no additional investment in capital equipment. The continuous, single-stage Solo-Matic Process has reduced downtime . . . cut over-all bleaching costs 25% over the former two-stage peroxide system. In addition, Harodite found that bleaching quality was maintained, and change-over to Du Pont's simplified process required no extra floor space!

As in every conversion, Du Pont Technical Representatives made a thorough plant survey, then presented their recommendations on how the Solo-Matic Process could best meet Harodite's needs.

You, too, can profit with Du Pont's Solo-Matic Process

Du Pont will show you how you can cut production and utilities costs while improving quality and output of your cotton goods. The versatile Solo-Matic Process can *double* your production in the same floor space, or maintain the same production in *half* the space . . . with either new or existing equipment. In any case you can count on improved brightness, fullness and uniformity in your product. Get all the facts on the Solo-Matic from your Du Pont Representative or write to E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware.

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ALBONE® hydrogen peroxide

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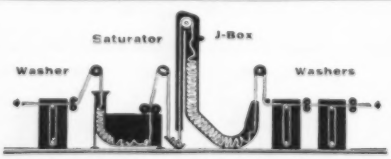

Du Pont's Solo-Matic Process—the most advanced single-stage hydrogen peroxide bleaching process available.

DON'T CONFUSE THE SOLO-MATIC WITH ANY OTHER PROCESS!

Other processes may *sound* similar, but there is *only one* Solo-Matic Bleaching Process and it was developed by Du Pont. It is essentially a chemical technique that can easily be adapted to any existing or new continuous peroxide bleaching installation. The Du Pont Solo-Matic Process is helping more than twenty-five well-known mills improve bleaching quality, cut costs.

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To help you use Solvay Caustic Soda most *efficiently*, we make 9 forms. To supply it *rapidly* and *dependably*, we produce it in 5 widely-scattered plants. To aid you in applying it most *effectively*, we provide technical service and literature based on extensive field work with users and painstaking laboratory research.

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☐ 76% small flake ☐ 50% liquor ☐ 73% liquor ☐ 50% mercury cell liquor ☐ 73% mercury cell liquor
☐ Technical Bulletin No. 6, "Caustic Soda"
☐ Wall chart of handling precautions

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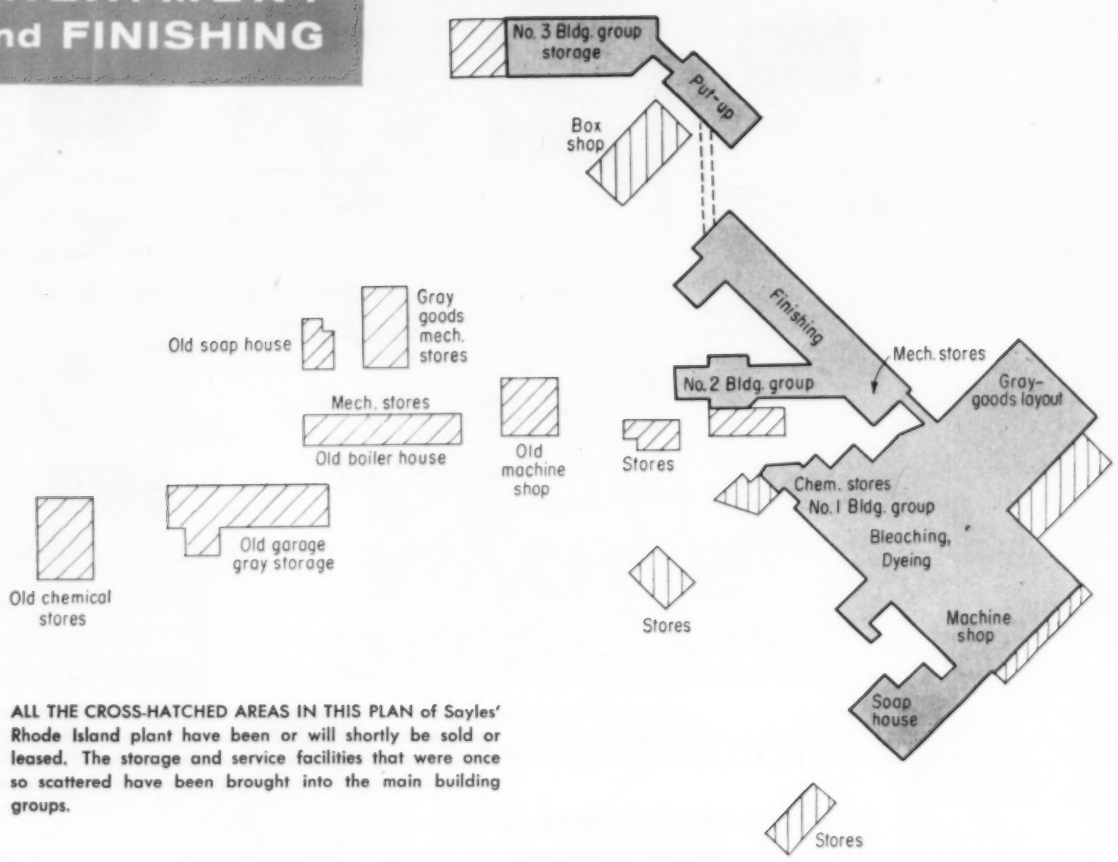

ALL THE CROSS-HATCHED AREAS IN THIS PLAN of Sayles' Rhode Island plant have been or will shortly be sold or leased. The storage and service facilities that were once so scattered have been brought into the main building groups.

Sayles Finishing Streamlines Plant

Results—

- Materials-handling costs cut
- Processing areas laid out better
- Tax and maintenance costs cut

START A BLEACHERY IN 1852, and grow with the times. Add buildings and departments all over a 26-acre lot as the years roll by; and you'll find yourself as Sayles Finishing Plants, Inc., did with a sprawled-out plant that is awkward and costly to operate.

The story behind this situation is familiar. In the heyday of New England finishing plants, the Saylesville, R. I., bleachery was among the largest and most successful. Tremendous yardages of finished staple cotton fabrics poured out of the plant. A large sheet-fabricating department added to company income. Eventually, over 1-million sq. ft. of space was required for the plant's operations.

Then in 1927 Sayles built a new plant in Biltmore, N. C. This plant has grown steadily and gradually has taken over a considerable amount of the high-volume staple lines from the parent plant. Also, the sheet plant is now located at Biltmore, as well as the corduroy-finishing operation.

In the meantime, the Saylesville plant concentrated on more-expensive fabrics, specialties such as book cloths

and blueprint cloths, and special finishes such as coatings, Heberlein finishes, and others of better income potential. Over 65% of the production in cotton fabrics is given wash-and-wear finishes. Much of Sayles current production of 1.8-million yds. weekly is marketed under its own tradenames.

Old Layout Unwieldy

But the old setup of buildings and awkward layout still remained. Gray goods were stored too far from layout and bleaching areas. Finished goods had to be trucked across the yard from the finishing and put-up areas to finished-goods storage.

The machine shop and repair department was inconveniently far from the major processing areas. Heavy chemicals and finishing materials required considerable hand labor to transport them from storage to use locations.

The need for plant realignment was not only a matter of shifts in the types of goods being handled. The way goods are received and shipped from the plant had also changed radically with the growth of over-the-road trucking.

The original warehouses for both gray and finished goods had to be located to accommodate rail transportation. Practically everything that came to or was delivered from the plant moved in freight cars on tracks that had to be laid at practical grades. At present, about 95% of goods and materials that enter or leave the plant are hauled by truck.

Gray Storage Changed First

One of the first changes in the new setup was made when gray-goods storage was moved to the upper and second floors of the three-story building shown as No. 1 Building Group in the sketch.

The third floor is accessible at grade to trailer trucks because of the topography of the plant site. Two chutes receive goods from the unloading dock. One delivers goods directly to first-floor layout and sewing. The other connects with second-floor storage.

If fabric is to be processed at once, it goes directly to the first floor. The second and third floors serve for general storage. Power trucks are used to place the bales in orderly fashion in the storage areas and to bring bales to the laying-out and sewing section of the first floor.

To move stored goods from the second or third floor to processing departments, the plant remodeled a standard mill elevator to handle bales automatically. Electric eyes detect a bale placed on a roller conveyor in front of the elevator and actuate a mechanism that puts the bale on the elevator. The elevator then delivers the bale to the designated floor and unloads the bale automatically.

This setup is a great improvement over the previous storage location, which was several hundred feet away from the processing areas and required transshipment of goods at high labor costs.

The bleaching and dyeing operations are pretty well concentrated in the No. 1 Building Group. Most of the finishing is done in the No. 2 Building Group. Calenders are being moved from their old location to a new area nearer the No. 3 Building Group to facilitate in-line processing. The No. 3 Building Group now houses put-up and open-stock and carton storage.

Service Departments Are Moved In

Sayles manufactures some of its processing materials such as soaps and finishes. The old soap house was set up too far away from the point of use for its products; so this building has been abandoned and the equipment it contained has been set up in the No. 1 Building Group.

Chemical storage, once well removed from the point of use, has been moved into the lower floor of the No. 1 Building group, where it is handy to the bleaching and dyeing departments.

The machine shop's new location in the No. 1 Building Group will bring this important section much closer to the processing departments than formerly.

The old box shop is no longer needed because practically all goods are now shipped in corrugated paper cartons. Mechanical stores have been centralized in the No. 2 Building Group from unhandy locations in outbuildings.

Sayles' program of consolidation will cut down the working area to about 650,000 sq. ft. Already some of the disused buildings have been sold, and the balance will be disposed of in time.

Tightening up the plant and relocating storage, repair, and some processing areas will give Sayles a plant that is cheaper to operate and more easily managed. At the same time, sale of disused buildings is bringing in cash and cutting down on the tax load and plant-maintenance expense.

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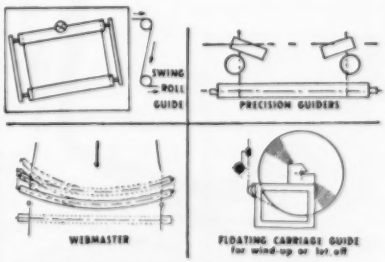

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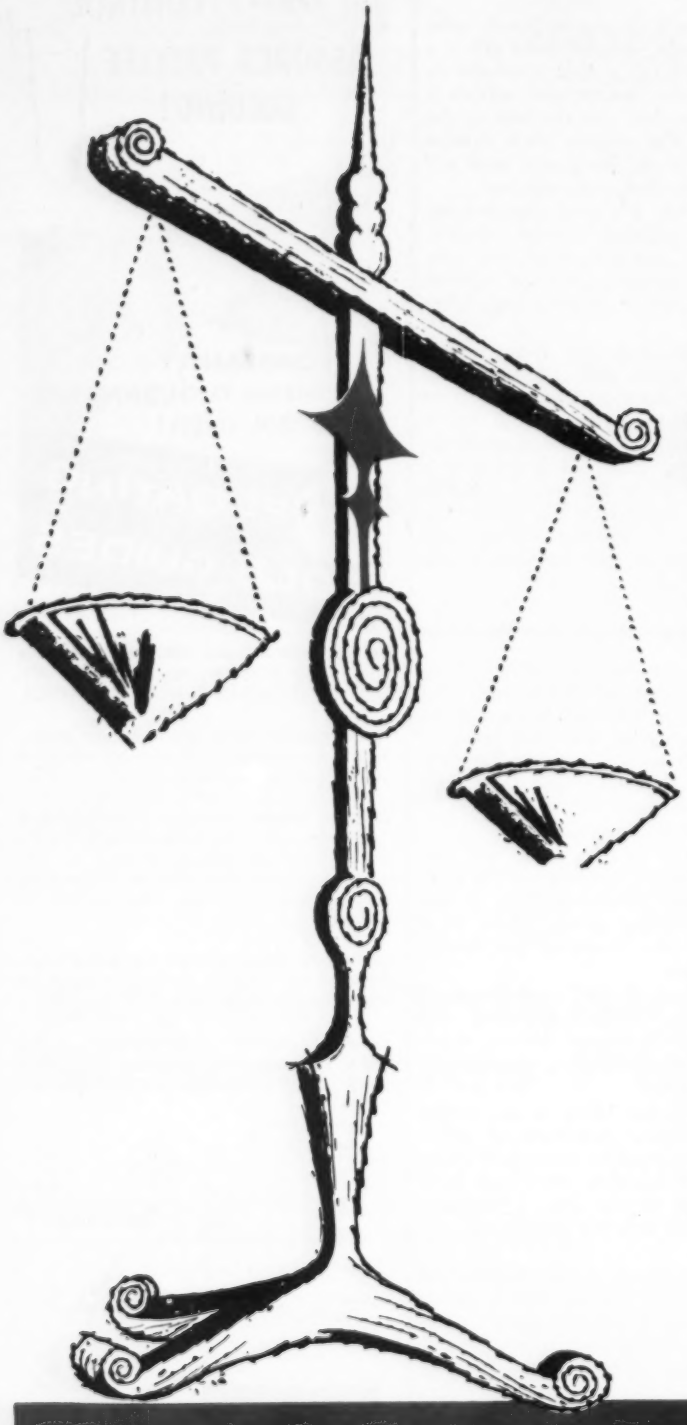

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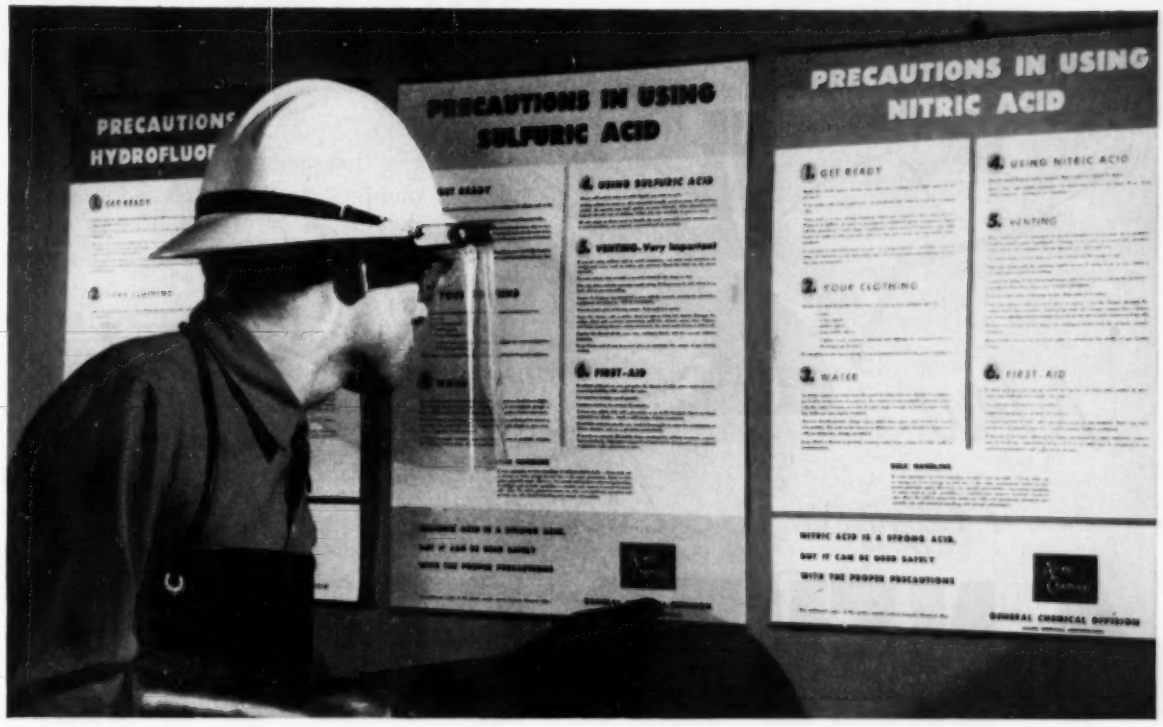

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The posters are free. They are large and easy to read—17 inches wide by 22 inches long. They come complete with metal rims, top and bottom, ready to post in a prominent position in your plant. To obtain any or all three, mail the coupon.

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How To Print Cotton Flannels

• Care in preparation, napping, and printing is necessary to do a good printing and finishing job on this staple fabric. Here are important processing steps that insure a good job.

By MALCOLM MACKAY

SUCCESSFUL PRINTING on cotton flannels is not too difficult if certain simple rules are followed.

The job really starts with gray goods that have been made from cotton that is suitable for napping and have been slashed with a sizing material that can be completely removed in normal processing.

To avoid distorted prints, the pieces should be sewed parallel to the filling threads when they are laid out. Biased seams produce crooked goods that often must be reframed in order to square up the patterns.

Good Bottom Is Necessary

Sizing material must be removed completely if the napping operation is to be successful. It is a good idea to run laboratory checks on gray goods to identify the sizing that has been used so that the boiling off and bleaching can be done to suit the fabric at hand.

Goods should also be checked for size content after bleaching and before napping. Small amounts of residual sizing material can interfere with the production of a good nap and may even contribute to undue loss of tensile strength.

After the goods are bleached, they should be dried on a can-tenter range that is equipped to detect and correct crooked filling.

The goods should then be treated with a softener in a pad and swung into a truck to lie for several hours. The time element insures thorough penetration, and less softener is necessary than is usually required if the goods are padded and dried immediately.

The goods should be dried on a tenter after softening, again taking care to keep the filling threads square with the warp. It is important at this point to pull the goods out a couple of inches wider than the finished width that will be required. Napping always reduces fabric width, more so in hot damp weather than in winter.

In spite of good lint-removal systems, a certain amount of loose lint remains on the goods after napping. This lint can be very troublesome to the printer; so various methods have been developed to get rid of it.

Some plants run the goods through an open soaper, which effectively removes loose lint and also reduces the amount of softener that was put in the goods to improve napping. Excess softener sometimes interferes with good printing; so the soaping process has a double advantage.

But the soaping process tends to pull down width, and usually the goods must be dried on a tenter to regain width and overcome crooked filling.

Less expensive methods include vacuum removal of lint from the goods if they are tentered after napping and before printing, and blowing lint off the goods with compressed air as they enter the printing machine.

In any case, it is important to remove loose lint before the goods are rolled up because rolling forces the loose lint into the nap so that only an open soaping will remove it.

Some plants apply a very light starch to napped goods before they are printed to prevent loose lint from producing snaps, stick-ins, and streaks. This method of dealing with loose lint is questionable; often the loose lint, pasted down by starch, will float free during soaping and leave unprinted spots in the pattern.

Goods should be led into the machine head-end first; that is, the free end of the nap should point away from the machine. All cloth guides should be free-turning rolls rather than bars because bars pick up lint and then redeposit it on the cloth and the cloth carries it to color boxes and doctor blades. Streaks are the inevitable result of accumulations of lint at these points.

The doctor blades should not be sharpened as keenly for flannels as for unnapped goods. For flannels, most printers sharpen the doctor blades about as usual and then round off the edge slightly with the stone. An edge modified in this way is less apt to attract and hold loose fibers that pass under it.

The print pastes that are used for printing flannels should be well lubricated to prevent nap from sticking to the print roll and accumulating in the color box. If the paste is properly lubricated, the print roll will feel slick to the touch.

Suitable additives that improve lubricity in a print paste include machine oil, glycerine, and methyl alcohol.

Step Up Drying Capacity

Flannels absorb more color and are generally heavier than the usual run of dress goods; so to print at speeds up to 100 yds. per min., it is necessary to add to the usual print-dryer equipment. Gas-fired ovens and infrared units are often used in conjunction with 7-ft. drying cylinders to get adequate drying capacity.

It is important that guide rolls turn freely in the drying system so that the nap will not be disturbed.

Prints that require ageing should be aged single-strand unless the color combinations permit two- or three-strand operation. Flannels printed from photoengraved rolls are particularly susceptible to any wrinkling in the ager, and the resultant disturbance of the nap will produce seconds. For this reason, it is always safer to age this type of work single strand.

Prints made entirely from pigment colors need no ageing but are cured at 300° F. for 1½ to 2 mins. in a curing oven to bind the pigment. Here again, the fabric should not be dragged across fixed bars that would distort the nap.

After the ageing or curing process, a thorough open-width soaping is necessary to remove acid residues in acid-aged goods, unfixed resin on pigment prints, and any odor-forming chemicals that might have been used in printing.

Flannels that have been properly printed offer few problems to the finisher. A large portion of printed-flannel vardage is going into wash-and-wear finishes today. These finishes are applied on flannels through regular pad-tenter-curing units and may or may not be after-washed, according to mill practice. Plain and shrunk finishes still account for the bulk of flannels on the market.

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New Markets for Old Fabrics

Laminating polyurethane foam to standard constructions of cotton fabrics has brought Robinson Cotton Mills—

- **New markets**
- **Better profits**
- **Easier merchandising**

By VICTOR SAXL

COMBINING COTTON FABRICS with the newest in insulating material has given Robinson Cotton Mills Ltd., Woodbridge, Ont., a new market for old staples in the cotton-goods field.

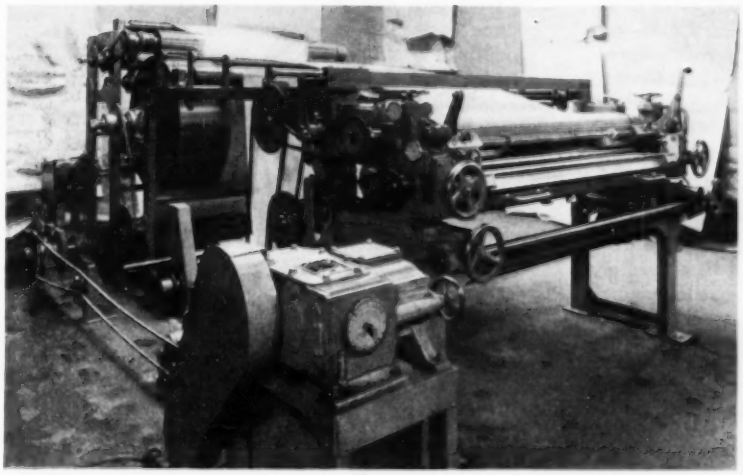
The plant is fully integrated and can finish up to 1.4-million yds. of cloth per week. Its own production of 80-square flannelettes, 2.85 drills, and sateens are the main items that go to the laminating operation. Laminated fabrics include interlinings, windbreaker fabrics, and undergarment materials.

Foam Made at Plant

Robinson makes its own polyurethane foam under license from E. I. du Pont de Nemours & Co., Inc., and Mobay Co.

The polyurethane foam is formed when urethane is reacted with a polyester or a polyether. Many products of varying degrees of elasticity and density are possible from this basic reaction. Robinson produces a very light, elastic product by its formula.

The foam is formed in blocks up to 60 ft. long and 60 ins. wide. The blocks are slit by a horizontal band slitter in various thicknesses down to ⅜ in. for different applications. The lengths are butted and joined together and fastened with masking tape to make rolls 50 ins. in diameter that contain several hundred yards.



FABRIC AND FOAM are laminated together on this machine. Adhesive is applied to the cotton by a kiss roll in the foreground. The two layers of material meet at the far side of the drying can and are batched up between the can and pad.

Adhesives Join Layers

The laminating operation is done on a machine that is especially designed for the purpose.

Fabric and foam are led to the machine, and adhesive is applied evenly to the cloth by a kiss roll that revolves in the adhesive.

Cloth and foam are then pressed together in a pair of nip rolls and led to a drying cylinder where the volatile content of the adhesive is removed, and the foam is cured at 280 to 300° F.

Right Adhesive Is Important

The adhesive must have several qualities to be suitable for this type of work. The viscosity has to be right to avoid soaking through to the face of the fabric, and the join must be firm so that the cloth and foam will not separate in service. Too, the adhesive should not cause any stiffening that would spoil the hand of the finished goods.

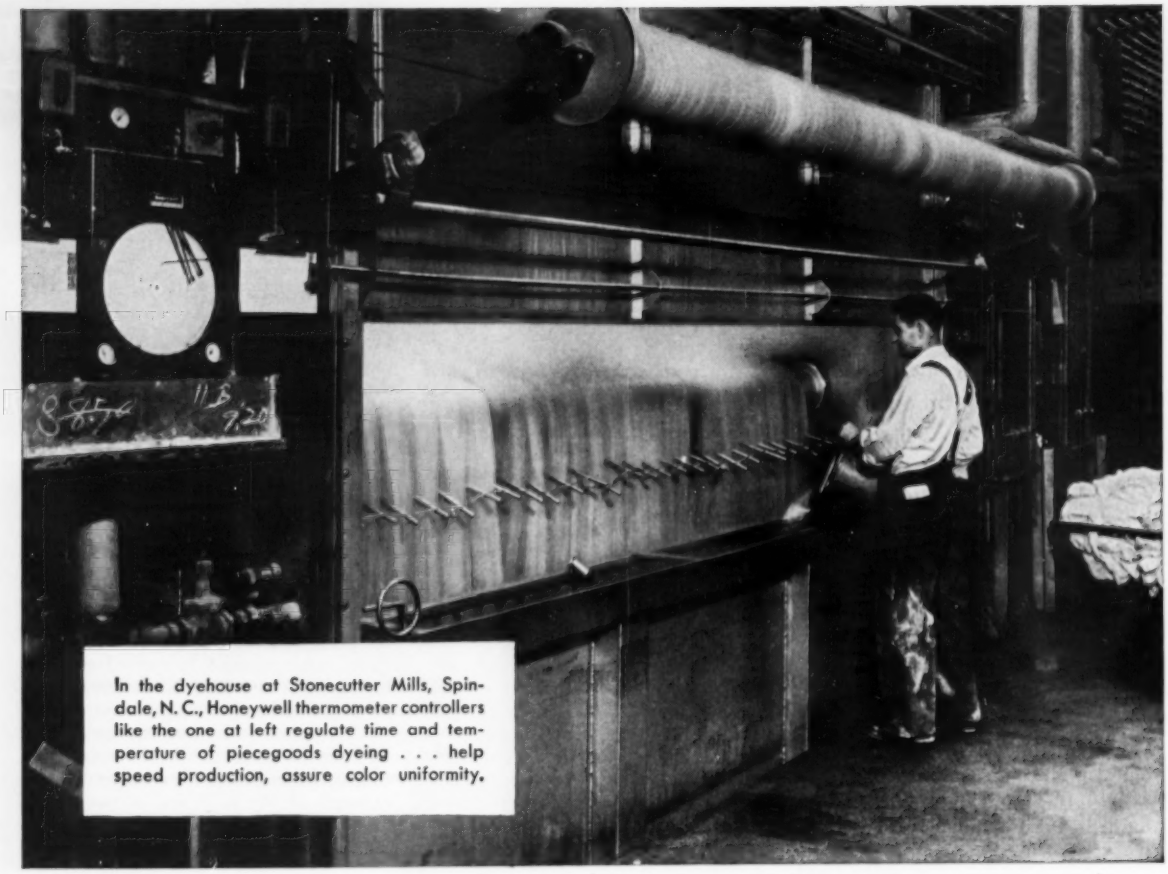
Finally, the adhesive should stand laundering and drycleaning.

The choice of adhesive also depends on the end use of the product. For interlinings, very flexible adhesives are used to insure good draping qualities.

End Uses Are Many

The fabric-foam laminates are made into interlinings for windbreakers, parkas, car coats, and other outdoor wear. Bed quilting, brassiere linings, rug underlays, and even petticoats for a cold climate are made up from Robinson's products. A light cheesecloth laminated to foam is also made to be used as a rug backing.

Laminating a urethane foam to cotton fabrics produces a much more valuable end product that has been a successful venture with Robinson Cotton Mills.



In the dyehouse at Stonecutter Mills, Spindale, N. C., Honeywell thermometer controllers like the one at left regulate time and temperature of piecegoods dyeing . . . help speed production, assure color uniformity.

Honeywell controls allow quick changeover in dyeing, keep quality high at *Stonecutter*

Stonecutter Mills dyes a variety of fibers . . . including nylon, Dacron, Orlon and acetates . . . in a variety of forms, *often all in a single day*. Dyehouse workers have to be skilled in quick changeovers . . . and their dyeing controls must be both accurate and flexible, for each fabric calls for a different dye, a different temperature, a different time cycle.

Though dyeing temperatures range from 130° to 212° F . . . and must be accurately held for cycles of 8 hours and longer . . . Honeywell dye control systems consistently assure production of top-quality dyed goods.

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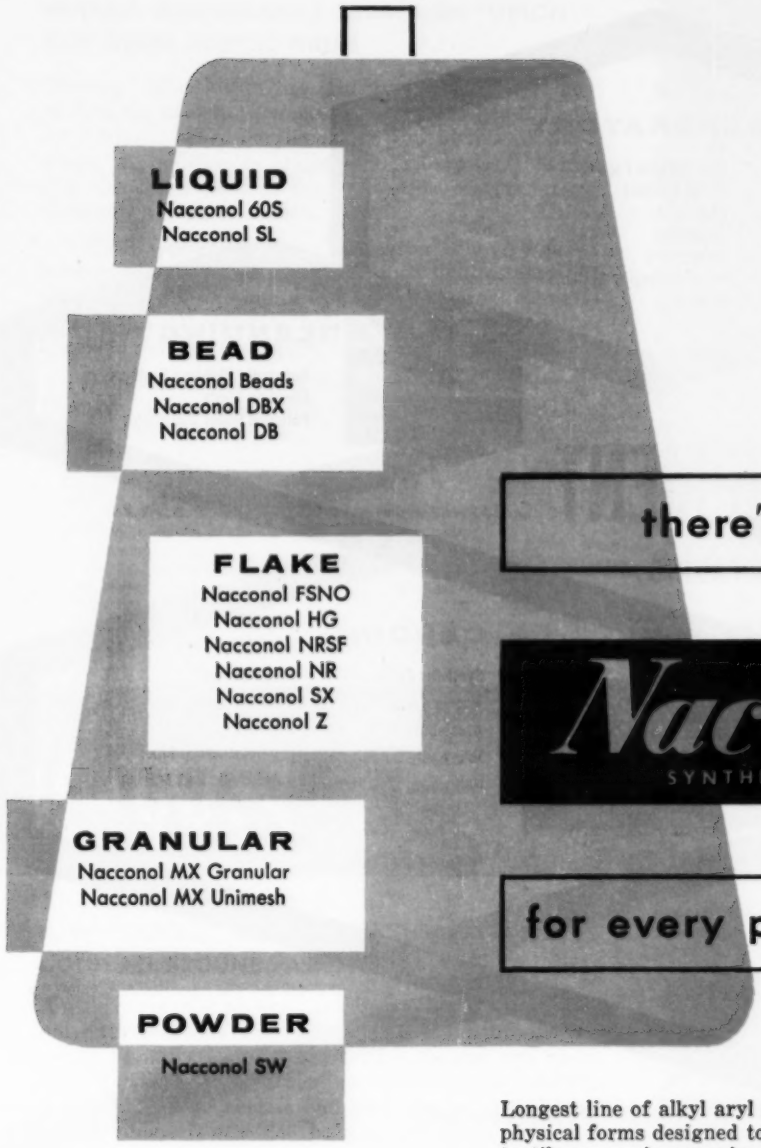

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NOW! A BRIGHTER "SEVRON"* BLUE FOR WETFAST, EASY-TO-APPLY SHADES ON "ORLON"* AND OTHER ACRYLIC FIBERS

"Sevron" Blue NF, a new Du Pont cationic dye, now enables the dyer to produce a wide range of fast shades on "Orlon", other acrylic fibers and blends of these fibers. In addition to bright blue self-shades, this new dye also lends itself to the production of tans, grays, charcoals and navy shades.

When applied to "Orlon", "Sevron" Blue NF shows very good wetfastness as well as good lightfastness. At the same time, staining of wool in acrylic-wool blends is only slight. It exhibits good solubility and stability, excellent build-up properties, level dyeing characteristics.

For ideas on how you can profitably use "Sevron" Blue NF, get in touch with the nearest Du Pont Office listed on the reverse side.

FASTNESS PROPERTIES

A.A.T.C.C. Test	Rating or Shade Change
Washing No. 3	Negligible
Washing No. 3A	Negligible to slight
Perspiration (acid)	Negligible
Perspiration (alkaline)	Negligible to slight
Fade-Ometer	
1% dyeing on "Orlon"	40 hours
4% dyeing on "Orlon"	60 hours

Approximate color of 2.0% dyeing on "Orlon" Type 42 fabric.

news from Du Pont

NEW "LATYL"* DYE FOR SYNTHETICS FEATURES GOOD ALL-AROUND FASTNESS

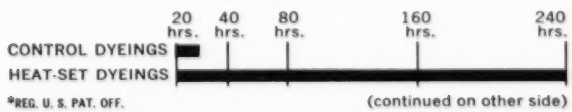
A wide range of shades can now be applied to "Dacron"* polyester fiber and other hydrophobic fibers through the use of "Latyl" Cerise N. This new disperse dye gives attractive pinks on "Dacron" or nylon, light to medium scarlet shades on acetate and pink shades on "Orlon" acrylic fiber. It can also be used for grays, tans and browns. It is particularly good for dyeing blends containing "Dacron" since it shows negligible to slight staining of natural fibers.

Except for its noticeably bluer shade, "Latyl" Cerise N is much like "Latyl" Cerise B in dyeing and fastness properties. For example, 2.0% dyeings on spun "Dacron" show negligible shade change when exposed to standard A. A. T. C. C. washing and perspiration tests. Lightfastness is excellent when fabrics are free from carrier. "Latyl" Cerise N also provides level dyeings and exhibits good build-up.

Du Pont dyeing specialists can give you more information and application suggestions. You can reach them at the addresses shown on the reverse side.

LIGHTFASTNESS

(Fade-Ometer Exposure Causing Shade Change Similar to Step 4 of International Geometric Gray Scale)



*REG. U. S. PAT. OFF.

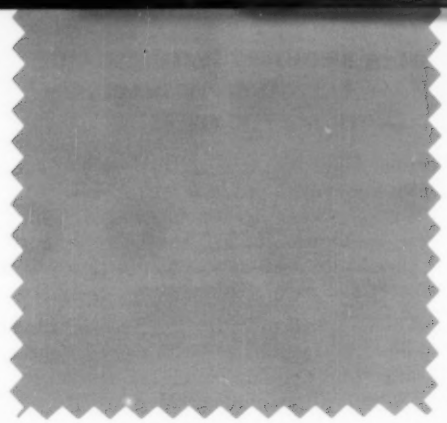
(continued on other side)

Approximate shade of 1.0% dyeing applied to spun "Dacron".

ANNOUNCING "SEVRON"* ORANGE CL: COMBINES 160-HOUR LIGHTFASTNESS AND GOOD WET PROCESSING FASTNESS

With this new "Sevron" dye, it is now possible to apply bright orange shades of 160-hour lightfastness to "Orlon"* and other acrylic fibers. Good dyeing properties also make "Sevron" Orange CL useful as a compounding element for tans, browns, grays and blacks. In particular, its good fastness to carbonizing and wet processing is expected to simplify the dyeing of "Orlon" in blends with wool.

The desirable processing characteristics of "Sevron" Orange CL include good solubility, good build-up and stability over a relatively wide pH range.



Approximation of 2.0% dyeing applied to "Orlon" type 42.

news from Du Pont

NEW "CAPRACYL"* BROWN HRN REPLACES MORE EXPENSIVE DYE . . . GIVES BRIGHTER, REDDER SHADES

As the replacement for "Capracyl" Brown HR, this new homogeneous dye now permits brighter and redder browns to be produced with greater economy. Shades ranging from pastel to heavy can be applied to either nylon or wool. "Capracyl" Brown HRN is especially suited for the continuous dyeing of wool rawstock.

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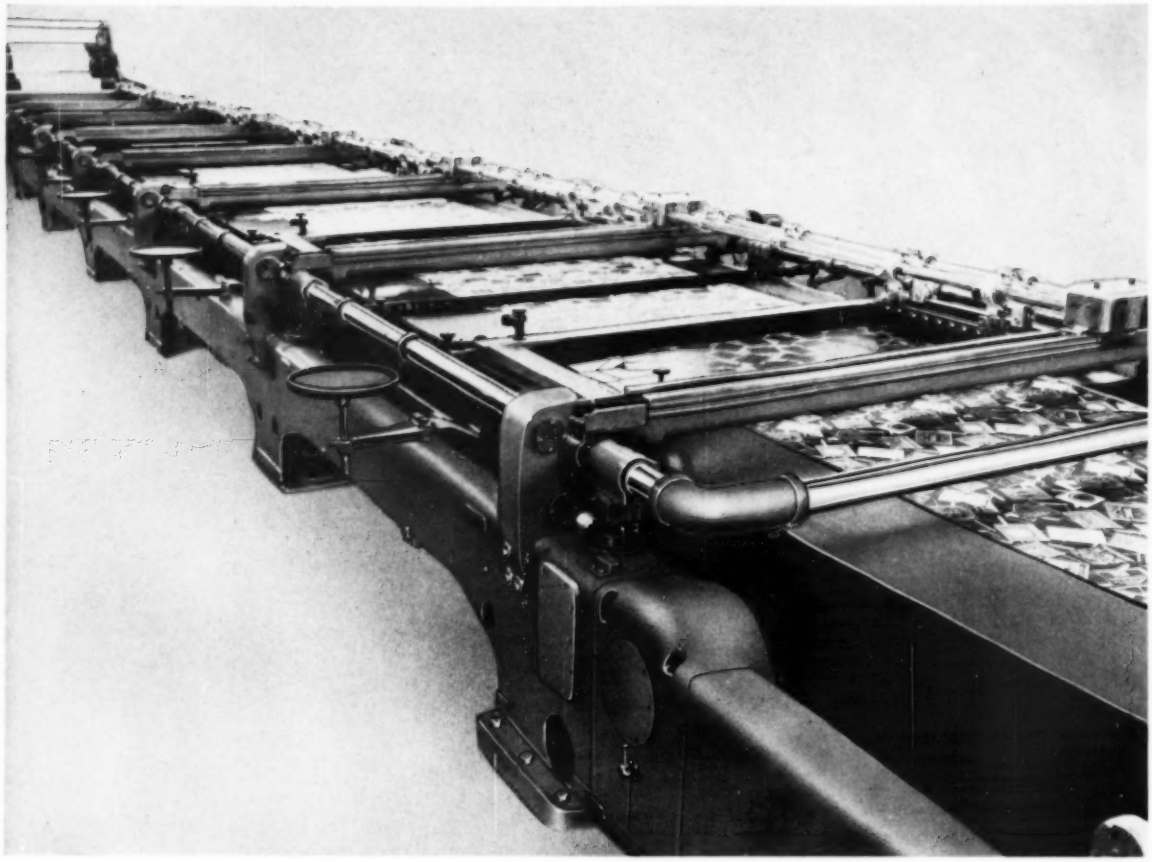

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A TEXTILE WORLD Refresher

The Basic Chemistry Of Dyes and Dyeing—I

- What color is
- What makes dyes soluble
- Raw materials: hydrocarbons, nitrogen compounds, oxygen compounds
- Intermediates and their uses

By WILLIAM POSTMAN, Ph. D., Asst. Professor of Textile Chemistry and Dyeing
A. French Textile School, Georgia Institute of Technology, Atlanta, Ga.

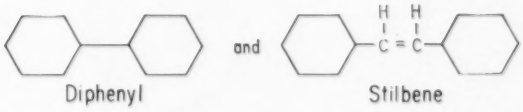
THE VISIBLE PORTION OF THE LIGHT from the sun consists of a mixture of all of the colors of the rainbow. When this mixture is reflected from a surface to the human eye, the surface appears white if all of the light that strikes it is reflected; it appears black if all of the light is absorbed.

Color results when an object absorbs some components of the rainbow mixture of light falling on it and reflects the other components back to the eye. For example, a substance will appear yellow if all of the colors of the rainbow except yellow are absorbed and only yellow light is reflected. The color yellow will also be produced if only the blue portion of white light is absorbed and all of the other colors of the rainbow are reflected. To the human eye, the appearance of a mixture of all colors except blue is yellow.

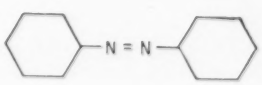
Some textile materials appear slightly yellow because impurities in them have the ability to remove the blue portion of white light that strikes them. If the goods are bleached with chlorine compounds or peroxides, these impurities are destroyed, as is their ability to absorb light. As a result, essentially all of the white light that strikes this bleached material is reflected to the eye and the material looks white.

Unbleached textile materials may also be made to appear white by adding a blue dyestuff. The impurity in the textile material absorbs blue light, and the material therefore appears yellow. The blue of the dye replaces the blue that is missing in the reflected light and the result is a material that appears to be white.

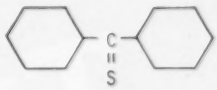
The ability of an organic molecule to absorb light is associated with the presence in the molecule of certain groups of atoms called chromophores (color bearers). For example, the molecules



are both colorless.

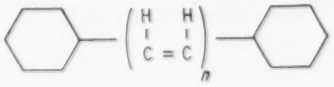
However, azobenzene 

which contains the $-N=N-$ (azo) group, is orange; and

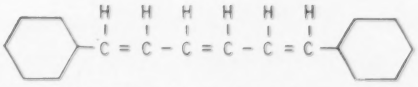
thiobenzophenone  is blue.

Groups such as the azo group and the thio group ($C=S$) are called chromophores.

The azo and thio groups, as well as the nitroso ($N=O$) and azoxy ($-N=N-$, with O) groups are strong chromophores; only one is necessary to confer color on a benzene ring. The nitro ($-NO_2$), carbonyl ($-C=O$), and ethenyl ($-C=C-$) groups are weaker chromophores. Note that stilbene (above), in which two benzene rings are joined by one ethenyl group, is colorless. However, in the series of compounds represented by the general formula



as n increases, the color too increases. When n is 1 (stilbene) or 2, the compound is colorless; when n is 3



the compound is pale yellow. As n increases further the color deepens; when n is 5 the compound exhibits a greenish-black color.

Chromophores confer color on an organic molecule; i.e., they determine what the color (hue) will be. Other groups attached to a molecule affect the intensity of the color observed. Groups that act in this manner are called auxochromes, examples of which, in decreasing order of effectiveness are: $-N(CH_3)_2$, $-NHCH_3$, $-NH_2$, $-OH$, and $-OCH_3$.

Generally, dyestuffs are colored chemical compounds that are applied to textile fibers from an aqueous medium for the purpose of imparting color to the fibers. The dyestuffs leave the dyebath and attach themselves more or less

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firmly to the fibers because they have an attraction for the fibers.

Because dyes are usually applied from a water bath, solubility in water is a desirable but not essential attribute of molecules that are to be used as dyes. The water solubility of dyestuffs is associated with the presence of sulfonic acid ($-SO_3H$) groups that form soluble salts ($-SO_3Na$) in the presence of alkali such as sodium hydroxide (NaOH), and with amino (NH_2) groups that form soluble salts ($NH_3^+ Cl^-$) with strong acids such as HCl. Although the vat and sulfur dyes are generally marketed in the form of insoluble powders or pastes, they can be transformed into water-soluble forms by a simple chemical reduction that can then be reversed to regenerate the initially insoluble material.

Essentially all of the dyes that are used today are man-made; they are synthetic or coal-tar dyes. The term coal tar is used to indicate that coal tar is the source of most of the raw materials that are used in the manufacture of dyestuffs.

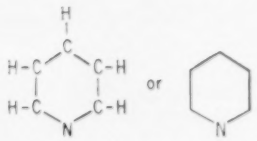
When coal is heated with limited amounts of air to produce coke and coal gas, other products such as ammonia and coal tar are also formed. When the coal tar is distilled in a separate operation, a large variety of organic chemicals is obtained; and several of these, after separation and purification, are used as raw materials in the production of dyes.

Raw Materials Are of Three Types

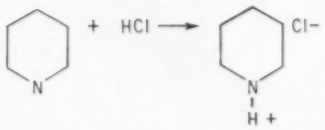
The raw materials obtained from coal tar may be grouped into three categories: hydrocarbons (composed only of the elements carbon and hydrogen), nitrogen-containing compounds, and oxygen-containing compounds.

Some of the important raw materials for dyes obtained by distilling coal tar are the aromatic hydrocarbons. (Fig. 1)

Pyridine is one of the nitrogen-containing materials obtained from coal tar.



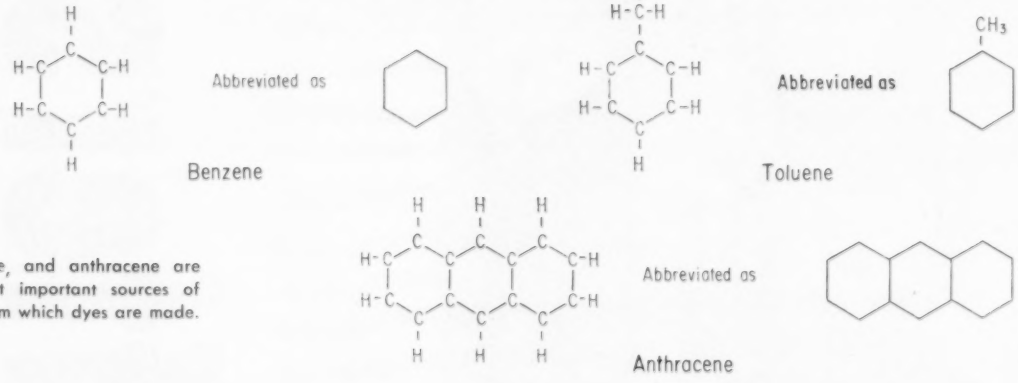
The presence of the nitrogen atom in the six-membered ring imparts basic properties to the molecule; that is, the nitrogen atom has the ability to combine with the hydrogen ion from an acid to form a water-soluble salt:



Advantage is taken of this property of nitrogen-containing constituents obtained from the coal tar to separate them from the neutral hydrocarbons and the acidic oxygen-containing compounds.

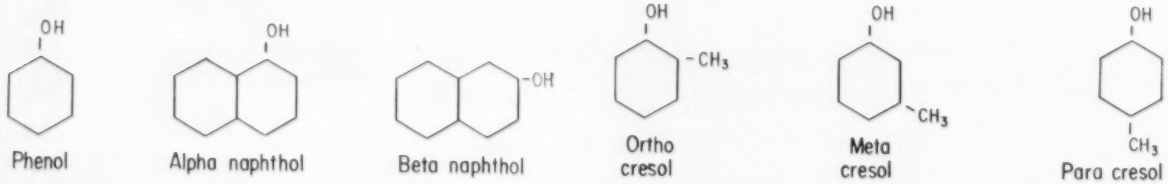
Some of the oxygen-containing raw materials available from coal tar are shown in Fig. 2.

Fig. 1.



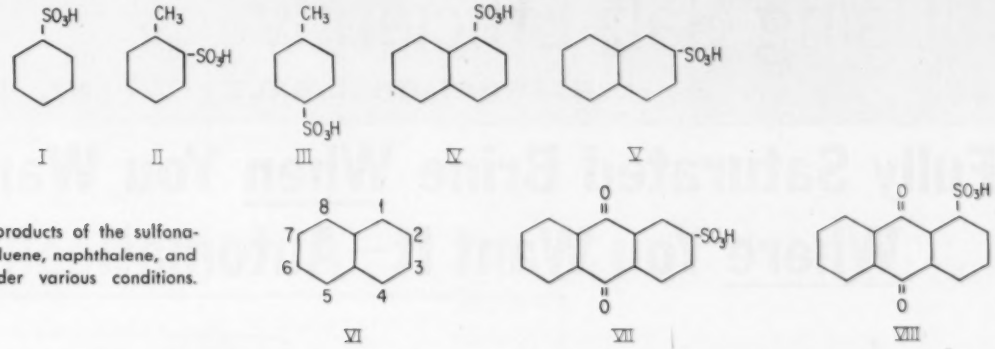
Benzene, toluene, and anthracene are among the most important sources of intermediates from which dyes are made.

Fig. 2.



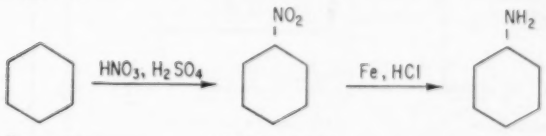
Oxygen-bearing materials in this group are another source of important intermediates.

Fig. 3.



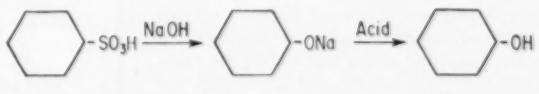
Here are typical products of the sulfonation of benzene, toluene, naphthalene, and anthraquinone under various conditions.

Fig. 4.



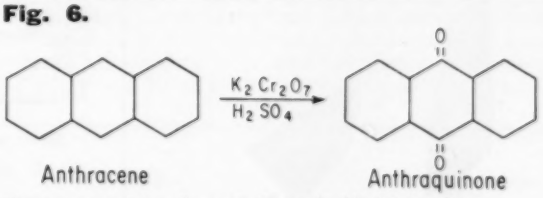
Aniline, a work horse of the synthetic-dye family, is made by nitrating benzene and then reducing the nitrobenzene.

Fig. 5.



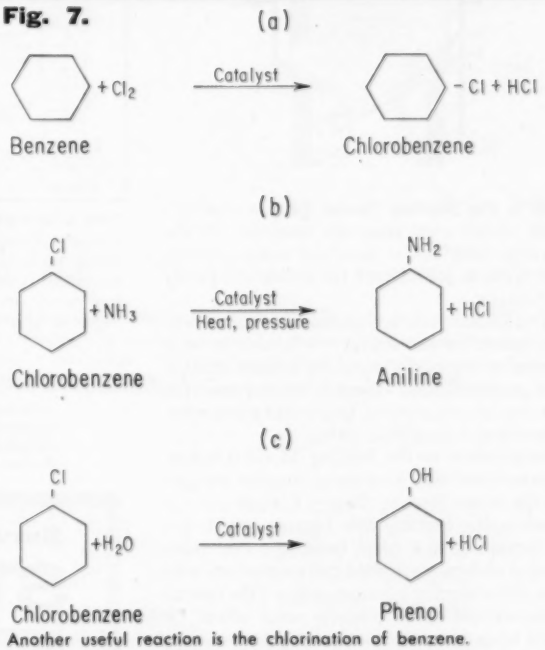
Benzene sulfonic acid is converted to phenol by this common reaction.

Fig. 6.



The raw material anthracene is a valuable intermediate when it is converted to anthraquinone as shown above.

Fig. 7.



Another useful reaction is the chlorination of benzene. Chlorobenzene (a) can be converted to aniline (b) or phenol (c) by methods mentioned in the text.

Intermediates Are Building Blocks

Benzene, toluene, naphthalene, and anthracene, all obtainable from coal tar, are the principal building blocks from which synthetic dyes are made. The dyestuff manufacturer starts with these raw materials and synthesizes molecules containing the desired chromophores and auxochromes as well as solubilizing groups. The raw materials are first converted into the intermediate products; and these, in turn, are used to prepare the dyestuffs. Starting with the parent hydrocarbons, various groups are introduced to form the intermediates.

Sulfonic-Acid Groups

Sulfonic-acid groups are introduced by reacting the parent aromatic hydrocarbons with concentrated sulfuric acid (Fig. 3). Benzene is sulfonated to form benzenesulfonic acid (Fig. 3, I).

Toluene, on sulfonation, yields two products (Fig. 3, II and III), the relative proportions of which can be controlled by the temperature at which the sulfonation is done. The sulfonation of naphthalene gives a mixture of alpha- and beta-sulfonic acids (Fig. 3, IV and V). Here again the temperature affects the product ratio.

Disulfonation of naphthalene (introduction of two sulfonic acid groups per molecule) yields four different products (Fig. 3, VI; sulfonic-acid groups at positions 1 and 5, 1 and 6, 2 and 6, or 2 and 7), the proportions of which vary with the temperature of sulfonation. If the 1,2-, 1,-4-, or 1,8-disulfonic acid is desired, it must be prepared by another route.

Anthraquinone, when sulfonated, gives the betasulphonic acid (Fig. 3, VII); sulfonation in the presence of mercuric oxide (HgO) yields the alpha isomer (Fig. 3, VIII).

Amino Groups

Amino groups are introduced into aromatic compounds almost invariably by first nitrating the raw material with

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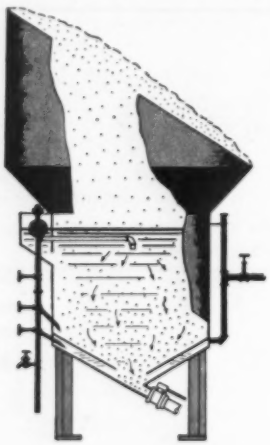

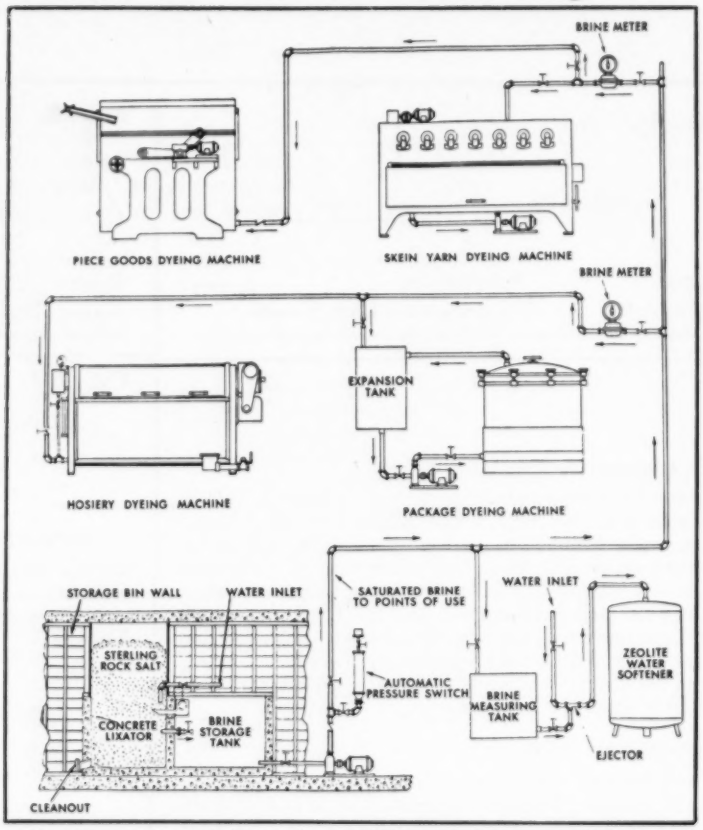

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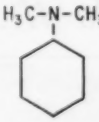
a mixture of concentrated nitric and sulfuric acids and then reducing the nitro compound with, for example, iron and hydrochloric acid. Aniline is prepared by reducing nitrobenzene (Fig. 4).

Dimethylaniline,  is prepared by heating aniline with a mixture of methanol (methyl alcohol CH_3OH) and sulfuric acid.

Hydroxyl Groups

Hydroxyl (—OH) groups are usually introduced by fusing the corresponding sulfonic acid with alkali, followed by acidification (Fig. 5).

Anthraquinone can be prepared by two different methods, one of which is the oxidation of anthracene with potassium dichromate in the presence of sulfuric acid (Fig. 6).

Replacement of one of the hydrogen atoms in benzene with a chlorine atom is effected by reacting the hydrocarbon with chlorine gas in the presence of a catalyst such as iron, iodine, or a chloride of iron, antimony, or molybdenum (Fig. 7-a).

Chlorobenzene

Chlorobenzene is used to prepare aniline as well as phenol. Treatment with ammonia at a high temperature and pressure in the presence of a copper catalyst converts chlorobenzene into aniline (Fig. 7-b); treatment with steam and a silica catalyst yields phenol (Fig. 7-c).

The introduction of a chlorine atom into toluene can be controlled so as to replace hydrogen atoms either in the ring to form ortho- and para-chlorotoluene or in the side chain to form benzyl chloride, benzal chloride, or benzotri chloride (Fig. 8).

Carboxyl Groups

The carboxyl group (—COOH) is introduced into dyestuff intermediates by oxidation of a side chain or, in the case of hydroxy acids, by reaction of the sodium salt of the hydroxy compound with carbon dioxide under pressure (Fig. 9)

The 2-hydroxy-3-naphthoic acid is called beta-oxynaphthoic acid or BON. This is the intermediate from which most of the naphthols of the AS series are prepared.

The catalytic oxidation of naphthalene, under the proper conditions, yields phthalic anhydride, one of the most important dyestuff intermediates. It is used extensively in the manufacture of anthraquinone (Fig. 10)

These brief statements regarding methods of preparation of some of the important dyestuff intermediates are intended only to indicate the large variety of chemical operations involved. For more detailed information, a standard organic chemistry textbook should be consulted.

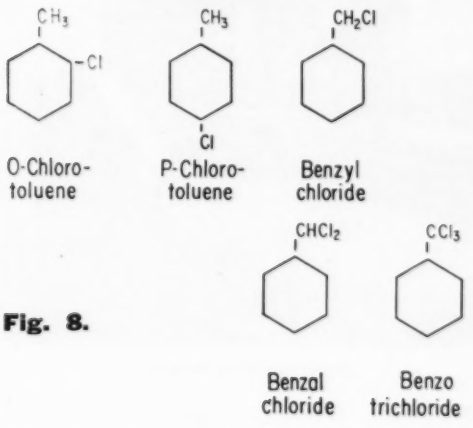
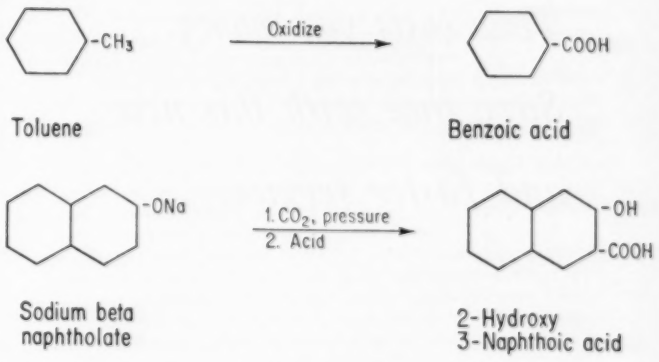


Fig. 8.

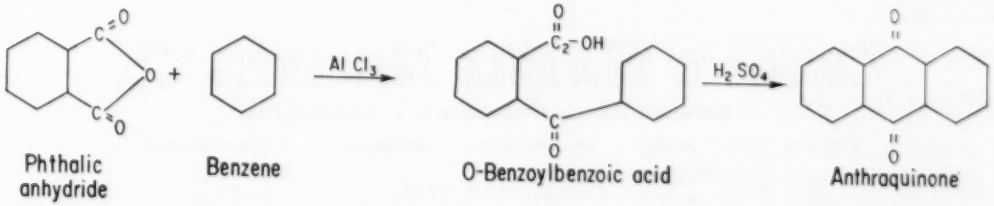
Toluene can be chlorinated in various ways to yield in-ring modifications or side-chain addition products.

Fig. 9.



By oxidizing the methyl group to COOH, benzoic acid is formed from toluene. A similar reaction can be brought about on sodium b-naptholate by treating with CO_2 under pressure.

Fig. 10.



Phthalic anhydride is an important intermediate that finds wide use in dyestuff manufacture. Here is how it is converted to anthraquinone.

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Material: Polyester
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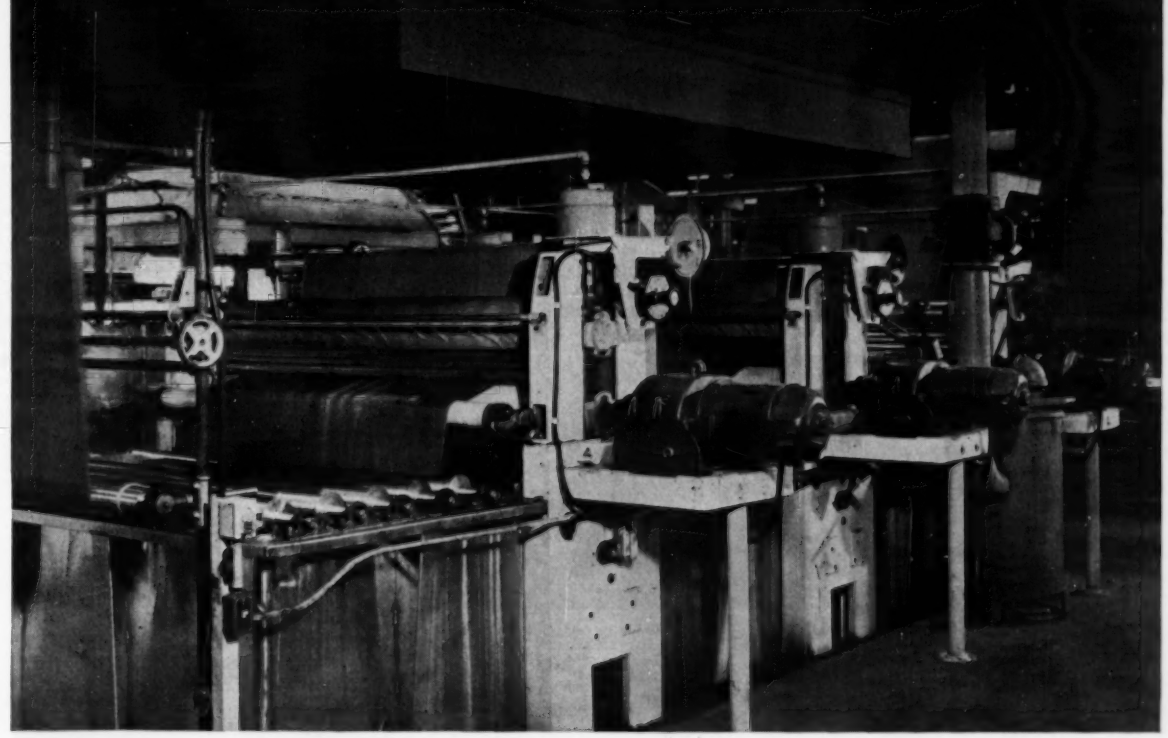

The Hunter open-width Washer-Soaper's unique flexibility of design permits you to integrate more of your own design requirements into a basically rugged, fast and dependable piece of equipment. Hunter will build virtually any arrangement of compartments, squeeze rolls and overflows to satisfy your special process needs and fit most efficiently and economically into the overall operation of your mill.

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AUXILIARY EQUIPMENT. Auxiliary spraying, steaming, brushing, expander, compensator and folder equipment can be supplied, as well as plate coil partitions, drip pans, stands for direct coupled drive, entering shakedown rigs, and air guiders.

Let us know your requirements. We will be glad to send you full details and specifications pertaining to your specific situation.

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We're very proud of this letter—

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DYERS • FINISHERS • PROCESSORS

TELEPHONES 6-3141

WEST CLINTON STREET EXT. JOHNSTOWN, NEW YORK

January 13, 1959

Mr. Harry G. Olson
Divisional Sales Manager
Taylor Instrument Companies
Rochester, New York

Dear Mr. Olson

One of the most difficult problems for a great many years in a dyehouse has been the lack of control in obtaining specific dyeing temperatures from batch to batch. The exhaustion of dyes can also vary by inconsistent time cycles during the rate of rise.

After a trial period of several months using the new TAYLOR FULFLEX DYE CYCLE CONTROLLER, we found this instrument under actual plant conditions, gave the control needed to produce top quality dyeing.

We are looking forward to the installation of these units on all of our dye becks, as in todays competitive market we need automatic controls and the ability to reproduce accepted standards.

Your desire to investigate our problems and to develop this instrument is greatly appreciated.

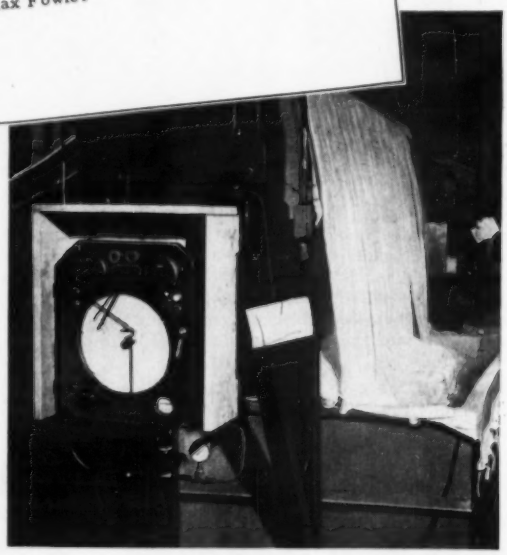
Very truly yours,

ADIRONDACK FINISHING CORP.

Wm. Max Fowler

Wm. Max Fowler

WMF:jf



Also we know there is no better salesman than an enthusiastic user. The small photograph to the right shows how the Taylor FULFLEX* Dye Cycle Controller looks "on the job" at Adirondack.

The instrument is completely adjustable—including: starting temperature, initial holding time, rate of rise, hold temperature, hold control times, add periods, forced cooling and end temperature. Ask your Taylor Field Engineer for a demonstration or write Taylor Instrument Companies, Rochester, New York, or Toronto, Ontario.

Remember, *Taylor Instruments mean accuracy first.*

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BRIEFS for buyers of

Caustic Soda
Lauryl Pyridinium Chloride
Chlorine
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40-page manual tells how to handle caustic soda

Written from beginning to end with the engineer in mind, this new Hooker manual sums up techniques for getting liquid caustic soda from the tank car into a process.

Among its contents are detailed equipment diagrams, a section on materials of construction, recommendations for unloading, diluting, piping, and storing caustic soda, and a section on safety precautions and first aid.

All in all a useful, compact book for the man responsible for caustic soda handling.

Check the coupon for a copy of Hooker Bulletin 102, *Caustic Soda Engineering and Handling Guide.*

Do you have trouble with spinnerettes?

One cause of higher costs in making rayon is to be plagued with clogged-up spinnerettes.

This is probably why a lot of our lauryl pyridinium chloride ends up in rayon plants. In the spinning bath solution, this chemical keeps spinnerettes clear of suspensions, reaction products and impurities of various kinds in the viscose solution. Among the impurities washed away by this detergent are precipitated cellulose, sulfur deposits, particles of resin, secondary reaction products and the like.

Our product is 85% pure alkyl pyridinium chloride. It dissolves into a clear or only slightly cloudy solution with water. It's also soluble in a variety of organic compounds.

There's more about the compound's properties and actions in the data sheet we offer in the coupon.

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Whether you use chlorine for bleaching or water treatment, you'll find this new Hooker wall chart an excellent addition to your safety program.

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The various valves used on these containers are diagrammed and explained.

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For details on the form that meets your needs best, check the coupon for technical data.

For more information on chemicals mentioned on this page, check here:

- ☐ Caustic Soda Engineering and Handling Guide
- ☐ Caustic Soda, liquid
- ☐ Caustic Soda, flake
- ☐ Lauryl Pyridinium Chloride
- ☐ Chlorine Safety Chart
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- ☐ Carbonate of Potash

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- ☐ Oxalic Acid
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HOOKER CHEMICALS PLASTICS

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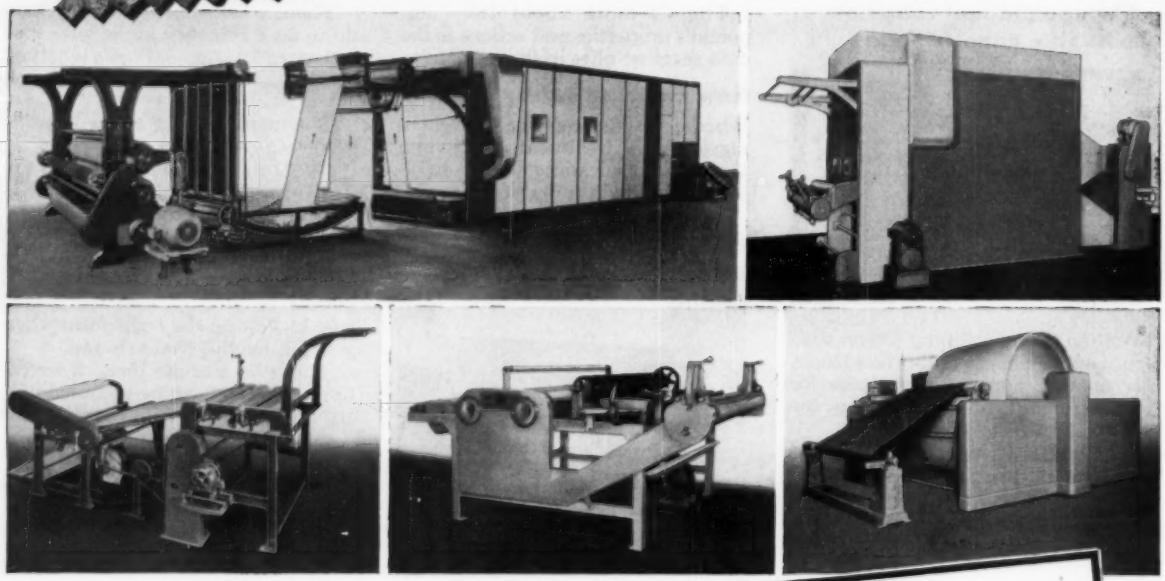
In sponging and shrinking and true fabric refinishing . . .

Gessner machinery outproduces any other equipment in amount and quality



Top row: Cold Water Shrinking Machine, Continuous Steam Sponging Machine. Bottom row: Table Steam Sponging Machine, Double Cylinder Sponging Machine, Refinishing Machine.

Any of five basic Gessner machines — the cold water shrinking machine, the continuous steam sponging machine, the table steam sponging machine with brush for fleeces, the double cylinder sponging machine, and the refinishing machine, which truly restore and embellish fabric finishes, do so at tremendous savings in operational cost.

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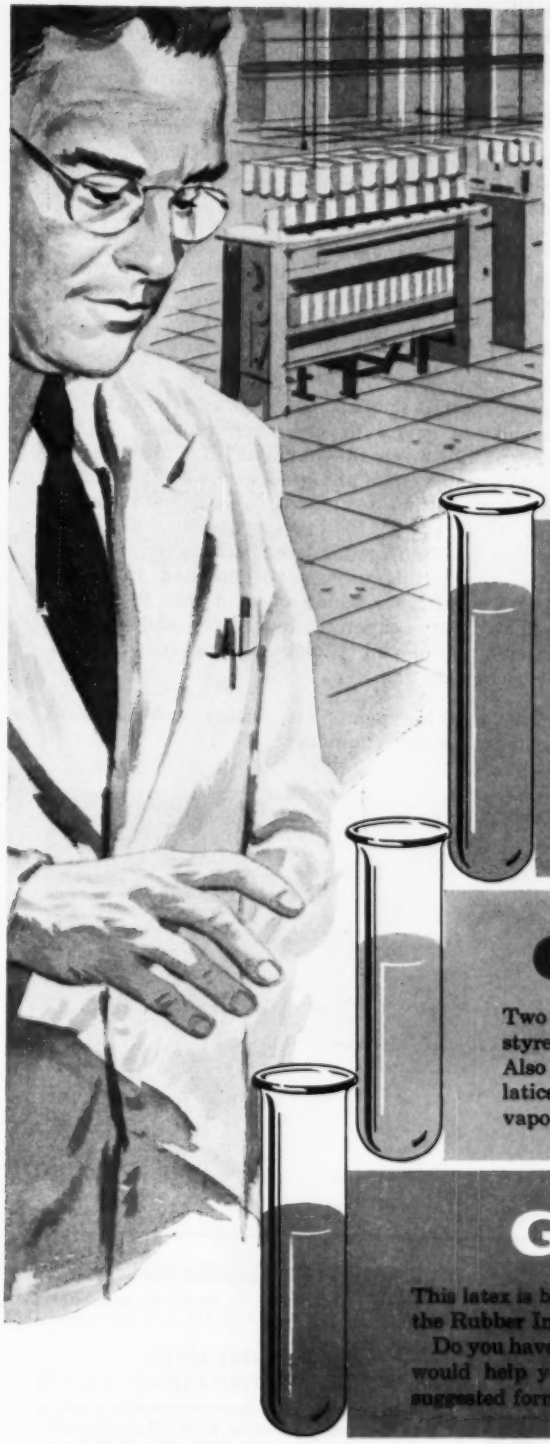

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which has been used by the Textile Industry for years in the treatment of fabrics for the Rubber Industry

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New mechanised process for hydro-extracting all kinds of textile material

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KRANTZ - rimless type hydro-extractor with gliding supports

Easy loading and unloading of the KRANTZ rimless type centrifugal hydro - extractor with gliding supports owing to the following improvement:

1) The basket is open up to the outer casing (rimless type).
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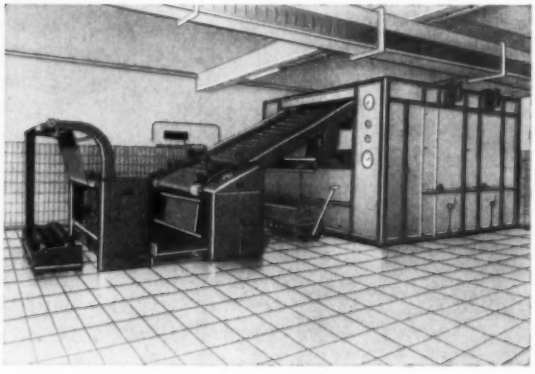
Please, ask for pamphlets, offers and technical assistance by our engineers.



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"We were suffering quality-wise and cost-wise because our caustic mercerizing baths were not really kept clean. We have solved the problem by installing a continuous filtering system using Nerofil.

"We tried methods used by other plants. The percolation method of passing the caustic solution through a bed of hard coal removed most of the large, suspended solids, but the finer material such as waxes, fine lint fibers and various precipitates were not removed. Furthermore, caustic was wasted each time this type of equipment was backwashed.

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2. Caustic density is easily controlled for more uniform brightness and dyeing.
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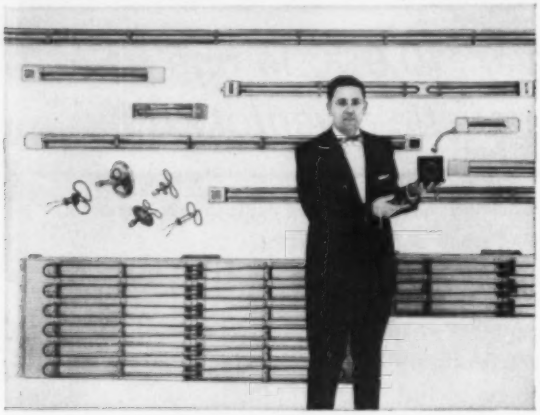
New heating problem? Old production headache?



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At his fingertips, your Chromalox Representative has the answer to production delays, irregular product quality and other common problems caused by complex, outmoded heat sources. Chromalox Electric Far-Infrared radiation can be simply and precisely controlled over largest work areas, and is absorbed uniformly by practically all colors—even optically transparent materials.

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imparts soft hand with little reduction in moisture absorbency

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UVERSOFT "D" is an outstanding anti-static agent. It should be considered for situations where the accompanying softening action is not objectionable.

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Street Address_____

City_____ Zone____ State_____

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POWELL

NICKEL and MONEL* VALVES

for Chemical and Process Industries

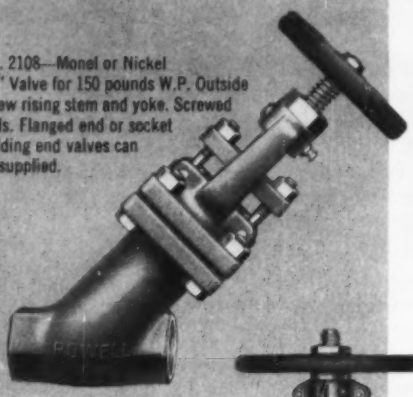


Fig. 2108—Monel or Nickel "Y" Valve for 150 pounds W.P. Outside screw rising stem and yoke. Screwed ends. Flanged end or socket welding end valves can be supplied.

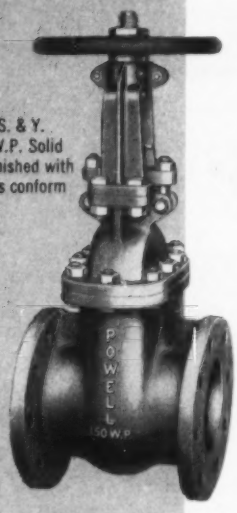
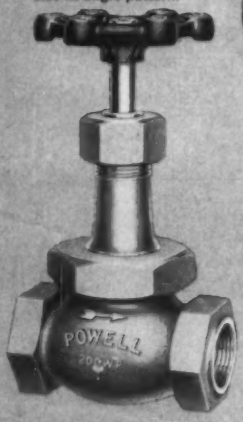


Fig. 2453 SG—Large size O.S. & Y. Gate Valve for 150 pounds W.P. Solid wedge disc. Can also be furnished with split wedge disc. Dimensions conform to latest standards.

Fig. 1836—Monel Metal
Fig. 1839—Nickel
Small Union Bonnet Globe Valve for 200 pounds W.P. Available with screwed, flanged or welding ends; also in angle pattern.



We have produced a wide line of NICKEL and MONEL* METAL VALVES. All are ready for immediate delivery!

When your flow control requirements call for Nickel or Monel* Metal Valves your local Powell Valve Distributor is the man to see. There's one located in all principal cities. Or write to us for complete information.

THE WM. POWELL COMPANY
Cincinnati 22, Ohio
dependable valves since 1846

*Registered Trade Name of The International Nickel Co.

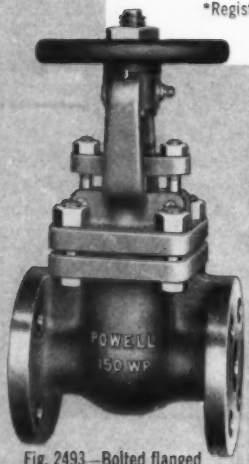


Fig. 2493—Bolted flanged bonnet Gate Valve for 150 pounds W.P. Outside screw stem rises through revolving bushing in upper yoke. Interchangeable solid or split wedge discs. Screwed or socket weld end valves also available.

Fig. 1828—Monel Metal
Fig. 1830—Nickel Inside screw rising stem Gate Valve for 200 pounds W.P. Accurately guided solid wedge disc. Also available with flanged or socket weld ends.

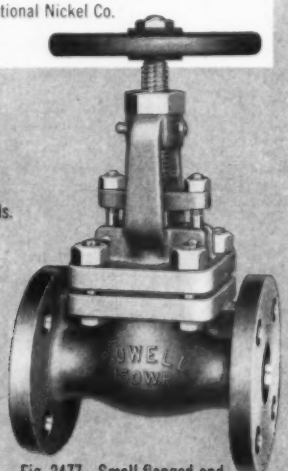
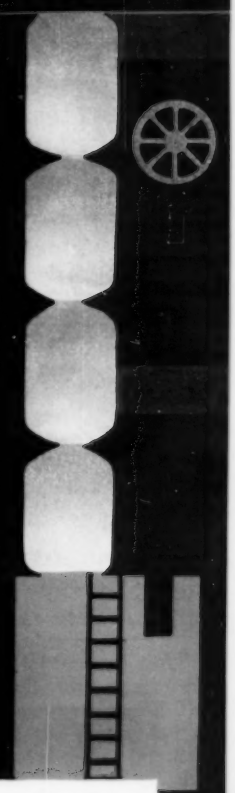


Fig. 2477—Small flanged end, outside screw rising stem and yoke Globe Valve for 150 pounds W.P. Bolted flanged bonnet. Can be furnished with screwed or socket weld ends. Angle Valves available.

Fig. 1843—Monel Metal. Fig. 1845—Nickel. Small size Check Valve for 200 pounds W.P. Screwed-in cap. Has straightway flow area through valve body when disc is in wide open position. Can also be supplied with flanged or socket weld ends.

IS YOUR PLANT UP TO DATE ?



"Our industrial machinery is not efficient enough to insure our continuing superiority over the Communist world.

Almost 50% of our industrial capacity was installed before the end of World War II and this capacity is definitely "old".

If these figures don't have sufficient significance to you, this one other statistic will: the latest machine tools are about 50% more productive than the models of 1950.

To interpret that statistic with bold bluntness, it means that many prices are being kept needlessly high because our industries are using obsolete facilities and thereby are wasting billions a year in labor and materials. It means that many of the industries showing the smallest profits (or biggest losses) are those which are using the most antiquated facilities and thereby are wasting billions a year in labor and materials."

The above statement was written by one of our country's leading economists and is based on a survey made by a respected and authoritative firm which specializes in such matters.

The obvious answer is to modernize while there is still time. Our sales and engineering departments are ready to assist you in working out your modernization plans. A telephone call, telegram or letter will receive prompt attention.

GASTON COUNTY

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Guaranteed

Let This Front Roll pay EXTRA DIVIDENDS on your spinning...

Enduring dependability is a designed-in quality of every Dixon Engineered Changeover, best illustrated by our patented, self-aligning front roll. Here indeed is superior design which will produce superior performance and *fast pay-back* in your mill, as it has in other competition-conscious mills* throughout the country.

1. Dixon Front Roll bearings are made from high carbon steel, races and balls hardened, ground, and polished. Here's top quality that can carry a real GUARANTEE.
2. Dixon Front Roll deep groove bearing is pre-lubed — NEVER NEEDS RELUBRICATION!
3. Dixon Front Roll contact-seals hug the races—stop lint, hold grease.
4. In Dixon Front Roll, the inner bearing race rotates — travels less distance — bearings last longer.
5. Dixon Front Roll cots are heavy-walled — give maximum load-carrying ability, permanent bond to arbor, and additional cushioning.
6. Dixon Front Roll cots are synchronized. They're easier to strip, and need no special buffing or repair equipment.

Best of all, the Dixon Front Roll is the quickest and lowest cost way to start your full Saddle Guide Changeover program. By installing self-aligning Front Rolls and Saddles and eliminating front cap bars, you remove immediately a major source of lubrication and cleaning. You reduce ends down and improve evenness. You're also well on your way to a complete oil-free and cap-bar-free center-suspension changeover.

Ask for our detailed report showing how an actual Dixon Engineered Changeover installation paid for itself in 25 months and is now saving $1.50 per spindle per year. **Dixon Corporation, Bristol, Rhode Island.** Southern Sales: Dunson & New, Inc.: Box 9202, Greensboro, N. C.; Box 321, Greenville, S. C.; Box 445, West Point, Ga.

*To mention a few

Mill	Spindles	System
American & Efird Mills, Inc.	31,078	Double Apron Casablancas
Carlton Yarn Mills	28,304	Double Apron Casablancas
Cortex Mills Div., Carlton Yarn Mills, Inc.	72,200	Double Apron Casablancas
Chicopee Manufacturing Corp.	272,032	Double Apron Roth and Casablancas

Dixon

Engineered devices for weighting and guiding top rolls since 1876

What You Are Versus What You Do

This article is the third "Pointers" aimed at the difficulties supervisors cause themselves and their subordinates, colleagues, and superiors if their behavior is confusing.

The first article raised the question of "what you do versus what you say." The second looked at "what you say versus what you are." This final reminder deals with the third big stumbling block supervisors throw in their own paths—blocks that can keep them from being promoted, provide them with home-made headaches on the job, and worst of all, pose doubts about their integrity as supervisors.

By S. G. WILLIAMS, Management Consultant

When a supervisor does childlike things, he has a problem. His friends worry about him. His employees are uncertain about him, even though he may do his specific job as well as the next man. In fact, this person would find, if he looked closely, that most of his difficulties are due to this difference between what he is and what he does.

Clemson Bates supervises a weaving section in a gray-goods operation. He's a technical expert with considerable skill in every aspect of the work, so much so that other supervisors often come to him with their problems.

But when they come, they look in first to see if Clem is in one of his "moods." If he's feeling good, Clem will have ideas by the score for solving their particular difficulty. If something has upset him, however, he'll be acting like a spoiled brat, popping off with wild accusations against everyone and making ridiculous suggestions as to what the visitor should do to remedy his problem. So if the neighboring supervisor does approach Bates at this time, he leaves with a very large pain in the neck but so solution.

Clem's boss says he'd be top-notch superintendent material if it weren't for this failing.

Act Like a Supervisor, Not a Worker

Because of industry's increasing efforts to promote from within, many supervisors have come from the worker group. Unfortunately, some of them have failed to make the switch completely. They still revert not only to thinking and talking like a worker but to behaving like one as well.

We were walking through a Southern mill recently, accompanied by the general manager. We came upon a big fellow busily moving cartons from an aisle, where they were in the way, around to the less-traveled side of a bin.

The general manager excused himself and went over and talked to the man. The results were astonishing. The big fellow turned red in the face, became obviously flustered and embarrassed, rolled down his sleeves, tightened his collar and tie, put on a suit coat, and hurried into the overseer's office.

As it turned out, the office was his. He was the overseer. What his boss had addressed to him was a simple question: "Tom, who's managing this department while you're out here doing this bull work?"

In mills where there are "working supervisors"—men who have both a physical job and a management job to do—the problem of making the switch is even more difficult because it must be done several times a day. But here, too, it is important that when the working supervisor is a worker, he act like a worker and that when he moves over into his supervisory duties, he tackle them as a supervisor.

Understanding the Difference

Managers have a wider view than workers have. The difference can be illustrated in a number of ways:

1. The employee is responsible for himself and his own work. He's interested in himself, his pay rate, his privileges, his growth and development, perhaps. The supervisor must think in terms of the group, not of himself. He has to be interested—and show his interest—in a number of people and their work, pay, privileges, and opportunities.

The supervisor whose concentration is on his own personal ends is acting like an employee, not a manager.

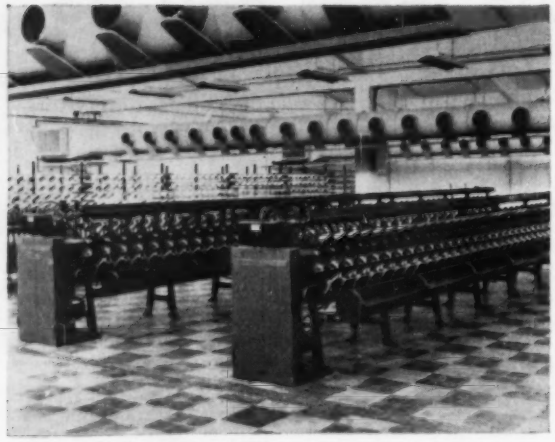
2. The worker comes to the plant geared to do his day's work. That's pretty well laid out for him. He doesn't have to think beyond that day. The manager, on the other hand, must plan ahead. If he's a good manager, he has long-range as well as short-range plans—goals he'd like to reach in terms of improvements in methods, lowered costs, higher quality and quantity, greater safety.

If he is a real manager at all, he has plans that look at least a week or a month ahead, even if his goals are only to meet his month's quotas or keep within his current budget. If he sees no further ahead than that day's work, he's not acting like the manager he's supposed to be.

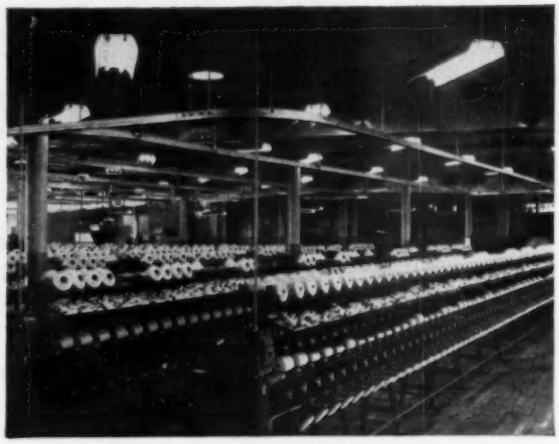
3. To an employee, the most important function of everyone else is to see that he gets his materials when he needs them, that his machine is in good running order, his area kept clean, etc. To the supervisor it is important that all machines, all areas, all materials are properly serviced. The supervisor with a pet operation or the supervisor who lets himself get so involved in the breakdown of one machine, for instance, that he neglects

CONTINUED ON PAGE 156

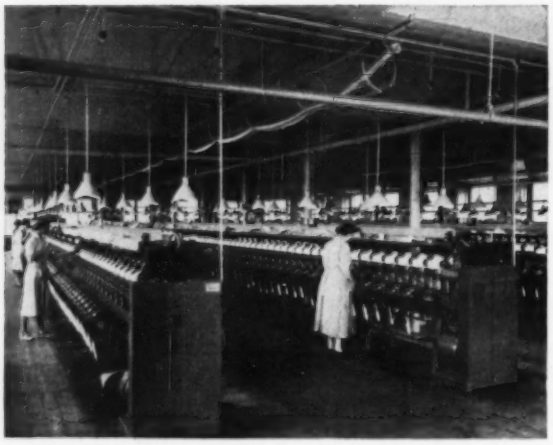
Leesona ROTO-CONER®
—the winding way around the world



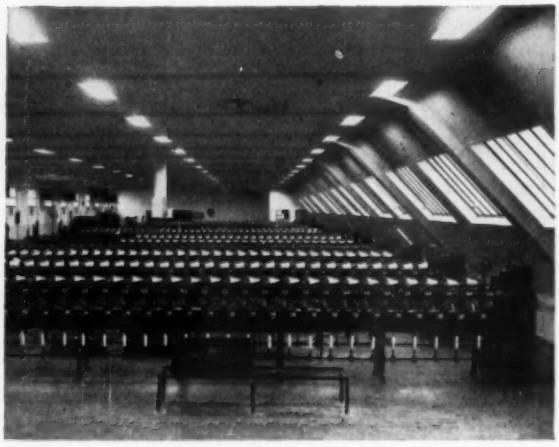
URUGUAY — Roto-Coners set up to wind onto paper cones. Machines are equipped with round bobbin boxes.



U. S. A. — Roto-Coners winding parallel tubes on one side, cones on the other.



GREAT BRITAIN — Roto-Coners winding open-wind knitting cones.



FRANCE — Roto-Coners coning 100s — 120s cotton yarn.

Every textile manufacturing country in the world uses Leesona Roto-Coners in quantity.

These quiet, trouble-free drum winders produce every type of open-wind package. They wind onto paper tubes and cones for shipment or knitting . . . onto cork-covered, wood cones for warper creels . . . onto perforated tubes and springs for dyeing . . . onto wood tubes and cones for twisting.

Around the world they wind cottons . . . spun synthetic staples . . . wools . . . worsteds . . . linens . . . blends.

The exclusive *Rotary Traverse* on these machines eliminates all moving parts connected with reciprocating guides—permits high speed, reduces maintenance, and assures uniform packages and top quality yarn.

For facts and figures on why these versatile, dependable machines are popular around the world, write for the illustrated Leesona Roto-Coner booklet.

23.6.14

UNIVERSAL WINDING COMPANY

P. O. BOX 1605, PROVIDENCE 1, R. I.

Sales Offices: Boston • Philadelphia • Utica • Charlotte • Atlanta • Los Angeles
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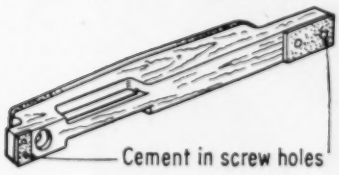
Agents in every principal textile center throughout the world.

Aluminum-Plastic Cement Holds Screws in Binders

The wood screws that hold the Formica plates on the drop-box-end binders of our S-6 looms come loose occasionally. If one screw continues to hold a loose plate, the protector motion hangs and a warp break-out is made.

As the screws come loose, they cut out the wood in the binders so that new screws will not hold. Therefore, we formerly discarded a lot of binders that were otherwise in good condition.

But we are now able to use the binders indefinitely by filling the cut-out wood-screw holes with aluminum-plastic cement that can be bought at most local hardware stores. The cement holds wood screws as well as the original wood. (K-4014) *Charles R. Batzer, Lancaster, Pa.*



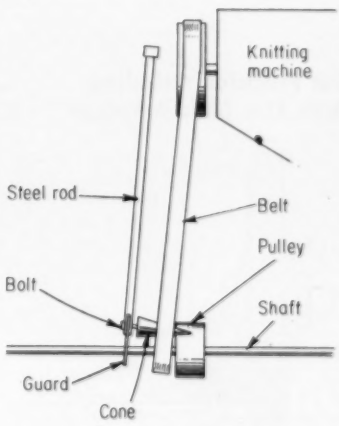
A Safer Way To Roll On Drive Belts

When a new belt is placed on knitting machines or the slack is taken from an old one, the belt must be removed from the drive shaft during the splicing operation. After this job is done, the belt is placed on the machine pulley and then slipped on the drive pulley while the shaft is turning.

Most fixers throw the belts on floor drive shafts with a foot. This practice is not safe. A device can be made in the mill to do this job much easier and safer. Here's how to make it:

Drill a hole near the end of a 4-ft. length of steel. Insert a bolt through the hole so that it turns freely. Screw the bolt to a cone arbor from a cone-winding machine.

Screw a guard at the top of the steel rod to rest on the shaft. To operate the device, rest the guard on the shaft near the pulley, slip the cone inside the belt, and press the cone against the pulley until the belt slides off the cone onto the pulley. (K-3592)



How To Reduce Stenographic Cost

We have reduced stenographic and typing costs considerably with the use of a simple device that may prove helpful to other textile manufacturers.

We increase our returns on inquiries and save a great deal of time by preparing an extra copy of all letters from which we want to receive a reply. The extra copy is put into a tickler follow-up file.

When the tickler file brings up the correspondence on a date designated and there has been no answer, then the following "MASS-MOHAIR-GRAM" is typed in red at the head of the copy and mailed to the company or party to whom we have written:

MASS-MOHAIR-GRAM
RECEIVED NO ANSWER TO THIS LETTER. PLEASE JOT DOWN YOUR COMMENTS ON THIS COPY AND MAIL TODAY USING PREPAID ENVELOPE ENCLOSED. THANKS. Massachusetts Mohair Plush Co., Inc., Box 632, Kings Mountain, N. C.

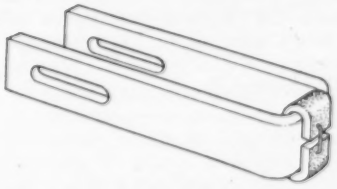
We are considering using the above as a sticker printed in black and yellow and attaching it to the copy of the letter—which should prove even more effective in attracting attention and prompt reply. (K-4062) *Fred H. Drewes, Kings Mt., N. C.*

Net Welded to Tension Disk Avoids Loss of Weight

The tension disks on our winding machines often got lost when we cleaned the machines. By soldering a nut to the top of the post, the disk now remains in position. Our yarn weight doesn't vary very much; so we don't have to add or take off weights. (K-3988)

Use Old Take-Up Rolls For Drilling Shafts

Old take-up rolls from rib knitting machines make a handy tool for drilling holes in shafts and other round stock. Just lay two rolls on the drill table with the piece to be drilled between them. The splines on the rolls will keep the piece steady for drilling. (K-3790)



Repair Worn Loom Lug Straps With Small Strips of Leather

The inside plugs of both short and long lug straps often become worn while the lug strap itself is still serviceable.

To repair these lugs, insert a strip of old leather checkstrap to form a snug fit at the position of the plug. Fasten the leather with a staple or lay-end-strap hook. (K-3779) *H. E. Wenrich, Bloomsburg, Pa.*

$500 PRIZE WINNER

H. J. Haas, of Martinsburg, W. Va., has received $500 as the 1958 annual prize in TEXTILE WORLD's Kink Contest. His winning Kink, "Inspect Face and Back of Cloth in One Run," appeared in the January, 1958, issue.

Mr. Haas, who at present is associated with Interwoven Stocking Co., Martinsburg, W. Va., has been in textile manufacturing for many years. He had a look at the beginning of man-made fibers and was one of the first in this country to wind rayon. Most of his experience has been in yarn manufacturing.

Mr. Haas has been a contributor of Kinks to TEXTILE WORLD for many years, and he also contributes ideas to magazines in other fields. At the International Inventors' Congress held in 1957 at Brussels, Belgium, he was awarded the Silver Star (second prize) for some of his ideas.

"But I am not an inventor," says Mr. Haas. "I am simply a 'scavenger' of ideas. However, I voice gratitude to those who are inventors and for the benefits we receive from their ideas. Writing Kinks is a hobby that I enjoy very much."

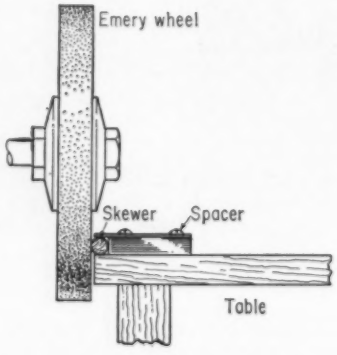
Clean Filling-Fork Prongs With an Abrasive Eraser

The prongs of center filling forks often need cleaning; and they sometimes become rough or have nicks in them.

A good tool to clean, polish, and remove nicks from the prongs is a round abrasive typewriter eraser. The eraser fits between the prongs and can be rubbed back and forth on them.

The prongs soon cut grooves in the eraser, but this is a further aid because the sides of the groove will contact more of the prong on each stroke. (K-3832) *H. E. Wenrich, Bloomsburg, Pa.*

Get Precision Grinding With This Simple Spacer



We bought several hundred thousand wooden skewers at a bargain to use as spindles for roving bobbins, but they were about 1/1000 in. too large in diameter for our purpose.

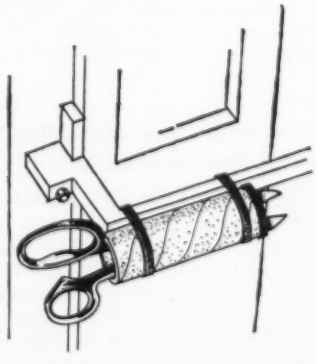
Hand-grinding the skewers to size was nearly impossible; so we made a spacer and fastened it to the table beside the grinding wheel. The distance between the grinding wheel and spacer is adjusted so that when a skewer is pushed between the wheel and the spacer, the skewer is ground to exactly the right size in 3 to 4 secs. (K-4076) *Daniel Gatewood, Wadesboro, N. C.*

Length of Cardboard Tube Makes a Holder for Shears

In mill departments where large shears are used, it is important to keep them in a place where they will not become damaged and yet are instantly available.

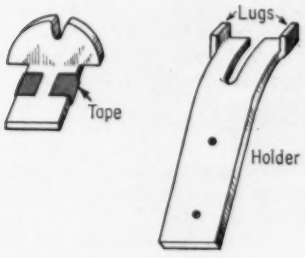
A short length of cardboard tube such as used for the core of rolls of cloth or paper makes a good holder for the shears. Wrap the cut end of the tube with tape to prevent the fibers from spreading, and put on a bottom if it's needed.

Attach the holder to a wall, table, or machine with tape; then the shears will always be at hand when you need them. (K-3829)



Tape Saves Porcelains on Winding Machines

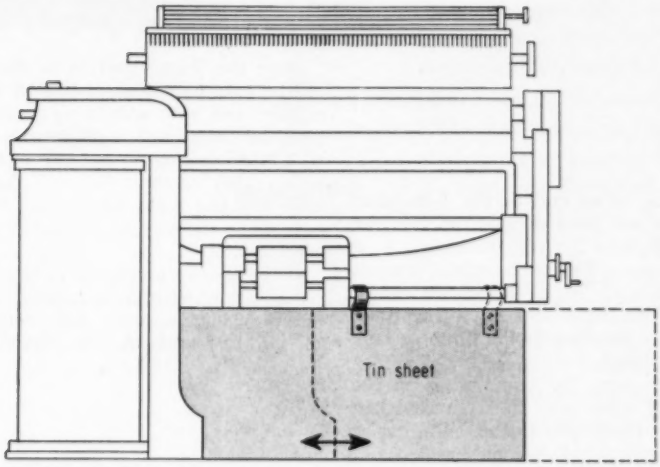
Excessive porcelain breakage on some winding machines is caused by too much play in the vibrator cams. Worn cams cause an extra snap at the end of the traverse, which causes the porcelains and the lug on the holder to break.



We stopped this breakage by wrapping a tape around the porcelain. The extra snap was absorbed by the tape and saved the porcelain.

The holder is hard spring steel; and by drawing the temper at the lugs, we further lessened the breakage. The holder tip is heated to a cherry red and allowed to cool slowly. (K-3987) *James Lavoie, Chelsea, Que.*

Baffle Under Card Stops Web Breakage

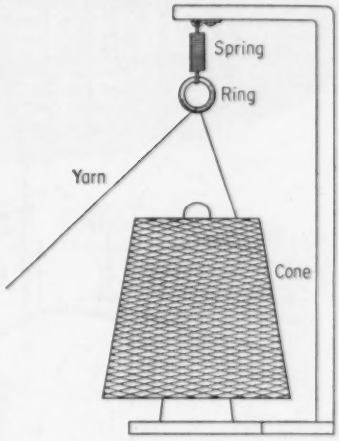


We have some bad air currents in our card room that frequently caused web breakage when we were running light-weight man-made fibers.

The trouble was stopped by installing a sliding tin sheet beneath the card as shown in the diagram.

The sheet, which acts as an air baffle, can be moved to one side for easy cleaning beneath the card. (K-4068) *I. Gorse, N. Essendon, Melbourne, Australia*

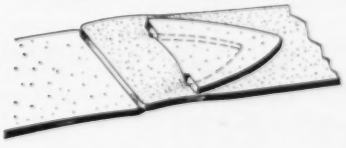
Spring Tension Makes Unwinding Easier



For some jobs, such as hosiery knitting, a fixed porcelain over the yarn cone causes faulty unwinding, uneven stitches, and poor length control. Instead of using the fixed guide, try a ring about ½ in. in diameter suspended from the take-off bracket with a tension spring.

Run the yarn through the ring to reduce the jerky balloon that adds uneven tension. (K-3822)

Arrowheads Cut Into Straps Make Good Temporary Repairs



When a strap breaks on a loom, it is sometimes necessary to make a temporary repair to keep the loom running. One such strap that breaks frequently is the parallel-motion strap at picker sticks.

A good method to rejoin the ends of two broken straps is to cut a triangular slot in one piece of strap. Trim the other piece of strap like an arrowhead. Then insert the arrowhead through the slot in the first piece as shown in the accompanying sketch.

A repair made in this way is nearly as strong as the original strap, and the strap will run until you have time to put on a new one. (K-3827) *H. E. Wenrich, Bloomsburg, Pa.*

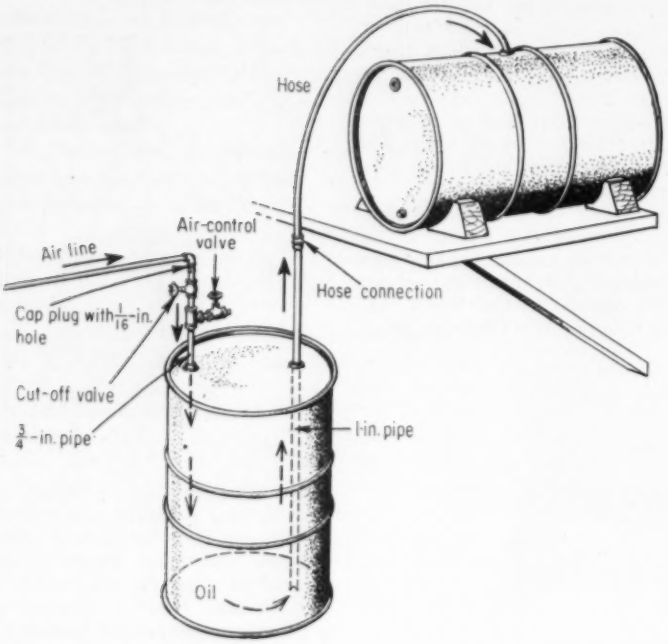
$25 KINK WINNER

The $25 prize for the best Kink in January was won by:

Ernest R. Beckner, Lexington, N. C., for his Kink "Way to Check Draft Gears"

WATCH FOR NEXT MONTH'S WINNER

Fittings and Compressed Air Transfer Liquids from Drums



When you need to move oil or other liquids from 55-gal. drums to other elevated drums or tanks, you can do the job with compressed air and a few pipes and fittings.

Use an 18-in. length of ¾-in. pipe and add two valves to it as shown in the accompanying sketch. Screw one end of the pipe into the small bunghole in the end of the drum to be emptied. Connect a compressed-air line to the other end of the pipe.

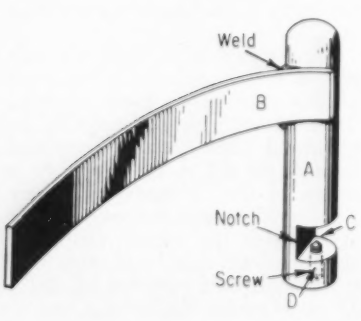
Cut a 1-in. hole in the large bunghole cap in the end of the drum, and weld a 1-in. pipe 54 ins. long into the hole. Fasten a rubber-hose connection on the other end of the 1-in. pipe, and screw the bunghole cap into the bunghole.

Screw a flexible neoprene hose of any desired length to the free end of the 1-in. pipe, and insert the other end of the hose in the drum or tank to be filled.

To pump the liquid, turn on the cut-off valve near the compressed-air line. Then open the air-control valve to regulate the rate of flow.

You can transfer the fittings from one drum to another quickly and move liquids with no physical effort. (K-4053) *J. Z. Batten, Social Circle, Ga.*

Guard on Hosiery Machine Prevents Cut Fingers



When the handle is up on our Crawford hosiery machines, the 12-in. drum is so close that we often cut our fingers on the drum. Here's how we made an effective guard to cover the bottom row of cams on the drum to protect our hands.

We cut a notch *C* in a piece of ¾-in. round steel *A* to fit the plate the 12-in. drum is fastened to. Then we welded the 1x⅛-in. flat steel *B* to *A* and bent it to the arc of the 12-in. drum. The guard is held in place by screw *D*. (K-3990) *James Lavoie, Chelsea, Que.*

Cut Down Old Swift To Run Off Damaged Cakes

Sometimes during the handling of rayon cakes before winding, lack of proper know-how or carelessness results in the cake not running off over end. To run these cakes off, we utilize a cut-down silk-skein swift of the wooden type.

Remove the wooden arms and cut them off 2¼ ins. from the bottom; sand the tips where the cut was made so as not to snag the yarn while it is running.

To make a firmer supply package while the yarn is rolling off, use heavy rubber bands instead of the usual swift bands. Place the cake on the swift, and turn the stocking back under the cake on each side. Permit part of the stocking to stick up on each side so as to act as a false flange and help keep the end from falling over the edge.

Place the thumb and index finger on the cake and press in toward the middle; and with a rotating motion turn the swift until there appears to be a raised section on the face of the cake. This arrangement will help keep the end from falling over the sides when the yarn is starting to unwind.

If the take-up package is to be used for filling, no tension is needed; but for throwing purposes add weight. (K-4061) *Joseph A. M. Sewesky, Berwick, Pa.*

Removing Stop-Motion Wires Lets Break-Outs Weave In

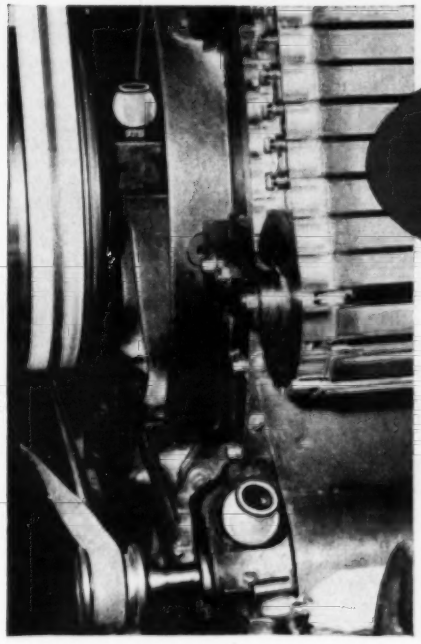
When the ends of a small break-out near the fork of a center filling stop motion are retied, the knots continue to break because they hang on the filling-fork feeler wires.

We stop knots from breaking by removing the feeler wires and the knock-off dagger from the loom. Both can be removed in about 60 secs.

The loomfixer restarts the loom and watches closely for broken ends until all the knots have woven into the cloth.

He replaces the feeler wires and daggers. Then he checks the stop motion and shuttle race carefully to see what caused the break-out.

By this method, we keep many rolls of cloth in firsts that would formerly have been graded as seconds. We also have greater loom efficiency. (K-4006)



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Lunkenheimer Engineering Devices pay for themselves many times over by preventing damage to expensive equipment. Lunkenheimer Oilers and Lubricators safeguard valuable machinery against friction damage. Lunkenheimer Pop Safety and Relief Valves keep destructive over-pressures under control. Lunkenheimer Air Devices cut expensive air losses. And *all* Lunkenheimer Engineering Devices do their job automatically...safeguard your equipment and provide economical operation year in and year out with a minimum of inspection and supervision.

When you specify Lunkenheimer, you get the benefit of the best *preventive* maintenance tools your money can buy. See the Lunkenheimer maintenance-reducing, service-minded Distributor in your area for literature and recommendations, or write The Lunkenheimer Company, Box 360, Cincinnati 14, Ohio.

Fig. 1815
Globe Bottle Oiler

Fig. 1300
"Sentinel" Sight Feed Oil Cup

Fig. 1183
Automatic Liquid Gauge

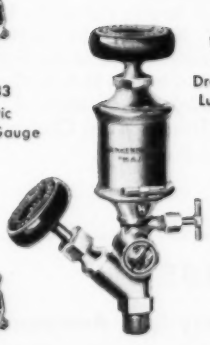

Fig. 487
"Major" Drop Feed Lubricator

Fig. 1227
Pop Safety Valve for Air

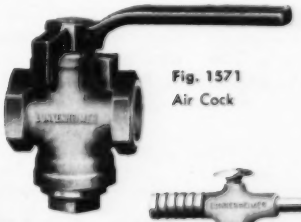

Fig. 1571
Air Cock

Fig. 96
Air Nozzle Push Button

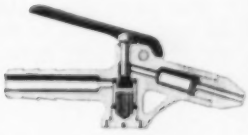

Fig. 1840
PT Air Nozzle Lever Handle

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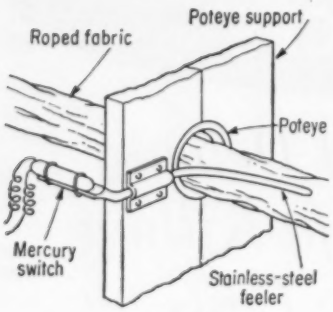
For more data, circle A-68 on Reader Service Card

Feeler and Mercury Switch Cut Down Rethread Time

We've saved a lot of time that was formerly required to rethread singer ranges and bleachery washers by putting loose-end detectors on poteyes leading to these machines.

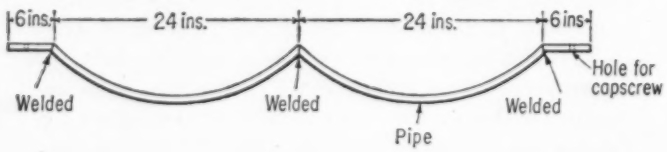


When a loose end goes through one of these poteyes, the feeler drops and breaks the circuit on the motor that is driving the singer or washer as the case may be.

Be sure the feeler is mounted as shown because if it is at any appreciable angle to the direction of the cloth, the loose end will be apt to wrap around the feeler and tear it from its support.

This idea is particularly valuable when goods move between walled-off departments. (K-4079)

Steel Yoke at Slasher Keeps High-Twist Warps Straight



We slash a lot of high-twist yarns on multicylinder slashers. We formerly ran the warp ends over a ribbon board just before the yarn sheet entered the size box. But because of the high twist, the ends had a tendency to roll together and consequently break.

We have eliminated 90% of these yarn breaks by substituting a steel yoke for the original ribbon board. The yoke is made for section beams 54½ ins. between heads.

Two pieces of galvanized water pipe are bent, as shown in the accompanying sketch, 24 ins. between ends. The ends of the pipe are cut at 45° angles.

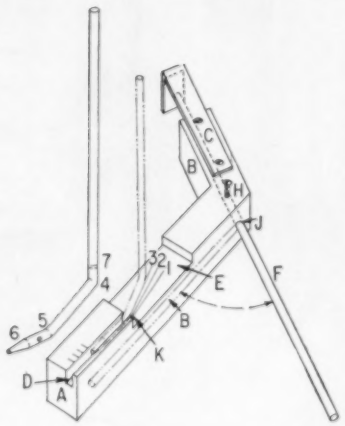
Two other pieces of pipe of the same diameter are cut 6 ins. long with square ends. Then the pipes are welded together at the angles. The joints and paper body are sanded until they are perfectly smooth.

Holes are drilled in the two ends of the yoke; and the ends are fastened to the slasher frame with capscrews in the position of the ribbon board, which is removed.

The arcs of the yoke hold the high-twist yarn in a constant position so that each warp end enters the size box parallel to the next end. (K-3769)

R. L. Hunnicutt, Whitmire, S. C.

Jig for Komet Fingers Saves Fitting Time



We sometimes have trouble getting the yarn fingers for our Komet hosiery machines to fit properly; so we made a jig to bend our own fingers.

The base of the jig is made from ½-in. square steel *A*, and the arm *B* is welded to the piece *A* at the same angle as 4 in the yarn finger; *C* is a stop screwed to the arm *B*.

The groove *D* is made the same size as the finger, and the section *E* is milled out of the base. Scribe three angles 1, 2, 3 on the milled-out section for different angles.

After drilling and tapering the stock required for a yarn finger, push it in the hole *J* to stop *C*. Grip the stock in position with screw *H*. Heat the stock and bend it parallel to the base *A* to give the angle 4.

To get the angle 5, place the tapered end of the finger in groove *D* and heat it at *K* to the required angle. Hole 7 is then drilled. (K-3986)

James Lavoie, Chelsea, Que.

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A KINK . . . is any idea that will cut costs, improve quality, reduce work, increase production, or make work easier.

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All Kinks are paid for on acceptance.

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Let us know if you don't want your name published.

Prize winners are selected by TEXTILE WORLD readers. At least 300 will be asked each month to vote on the best Kink that month. In case of ties, duplicate prizes will be paid.

Send Kinks to:
Kinks Contest, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

For more data, circle A-69 on Reader Service Card →

News about LUREX®

Caustic-resistant Lurex

This new caustic-resistant metallic yarn is a modification of Lurex MF (polyester-foil type).

Designed to increase your profit opportunities, it: —

- Provides a greater margin of safety against caustic degradation during cotton bleachery operations.
- Economically advantageous. Extends the use of Lurex to perform in a standard cotton bleachery cycle.
- Stands up under a full-white, continuous peroxide bleach; mercerizing; continuous vat and sulphur dyeing as well as jig dyeing.

See your nearest Lurex salesman about ordering this new caustic-resistant Lurex.

Lurex, non-tarnishing metallic yarn made only by the Textile Fibers Department of

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No. 10 in a series—how your Du Pont salesman is backed by many sales-building activities, including Fiber Research, Technical Service, Fabric Development and Merchandising.

At Du Pont, electronic brains help unravel a knotty sweater problem

It looked as though several hundred thousand different sweaters of "Orlon"* acrylic fiber would have to be made and scientifically tested to find the best *combination* of hand and performance. And the job would take many years.

But Du Pont researchers didn't want to wait that long. They selected the important yarn and fabric construction variables and translated them into a form that could be handled by a giant electronic computer. It clicked off calculations at 22,000 per minute! And in six hours the Du Pont computer provided data on optimum constructions. In the photo at right, Orv Wetmore, a Textile Fibers research manager, shows a sweater made by the new technology to two of the engineers who analyzed the electronic data which made it possible.

Electronic computers are only part of the vast system of technical and scientific apparatus used by Du Pont to solve problems for the textile industry. Continuous research by hundreds of fiber technologists, backed up by teams of chemists, physicists, and other scientists, is devoted to the development, manufacture, and improvement of Du Pont fibers. Knowledge gained through this research is constantly being shared with the textile industry.

It has long been Du Pont's belief that the market for its fibers can best be advanced by providing helpful assistance to all levels of the textile industry. Through your Du Pont salesman you, as a customer, have ready access to a range of technical and merchandising information unique in the textile industry.

From raw fibers to retail sales
. . . Du Pont builds profits for you

For more data, circle A-70 on Reader Service Card

PRODUCT and PROCESS NOTES FROM DU PONT

Stabilizing Warps of "Dacron" Polyester Fiber on the Slasher** — A practical method has been developed for stabilizing "Dacron" filament warp yarns, allowing the weaving of loom-finished fabrics. Warps having an acceptable shrinkage level (2 per cent or less when subjected to ironing temperatures of 325°F.) can be produced during slasher sizing by passing the warp sheet over a flat, heated surface prior to entering the size box. The instrument used in the operation is an electrically heated chrome-surfaced steel plate. Fabrics produced with these warps retain their stability through normal laundering or drycleaning processes. This development is expected to offer new opportunities to weavers of loom-finished fabrics, such as bedspreads, draperies, and casements.

"Ondulé" Rayon — "Ondulé", Du Pont's new continuous-filament rayon yarn containing randomly spaced, entangled slubs, is making fashion news in dresswear, suitings, draperies, curtains, and casements. It is now available in 150, 250, 450, 1,100 and 2,200 deniers. The unusual slub characteristics of "Ondulé" impart to fabrics a distinctive texture which resembles that obtained with certain types of silk. It is expected that this new yarn will also become important in men's sport shirts and neckwear.

Type 707 Nylon — Du Pont has announced a new nylon yarn designed and developed for cordage — Type 707 Nylon. Ropes made from this new nylon have 16% higher breaking strength and three times greater resistance to internal abrasion than regular nylon.

The new ropes are not weakened by rot or mildew and have exceptional resistance to wear, plus the light weight and easy-handling characteristics of conventional nylon lines.

*"Orlon" is Du Pont's registered trademark for its acrylic fiber.
**"Dacron" is Du Pont's registered trademark for its polyester fiber.

Enjoy the "Du Pont Show of the Month" on CBS-TV

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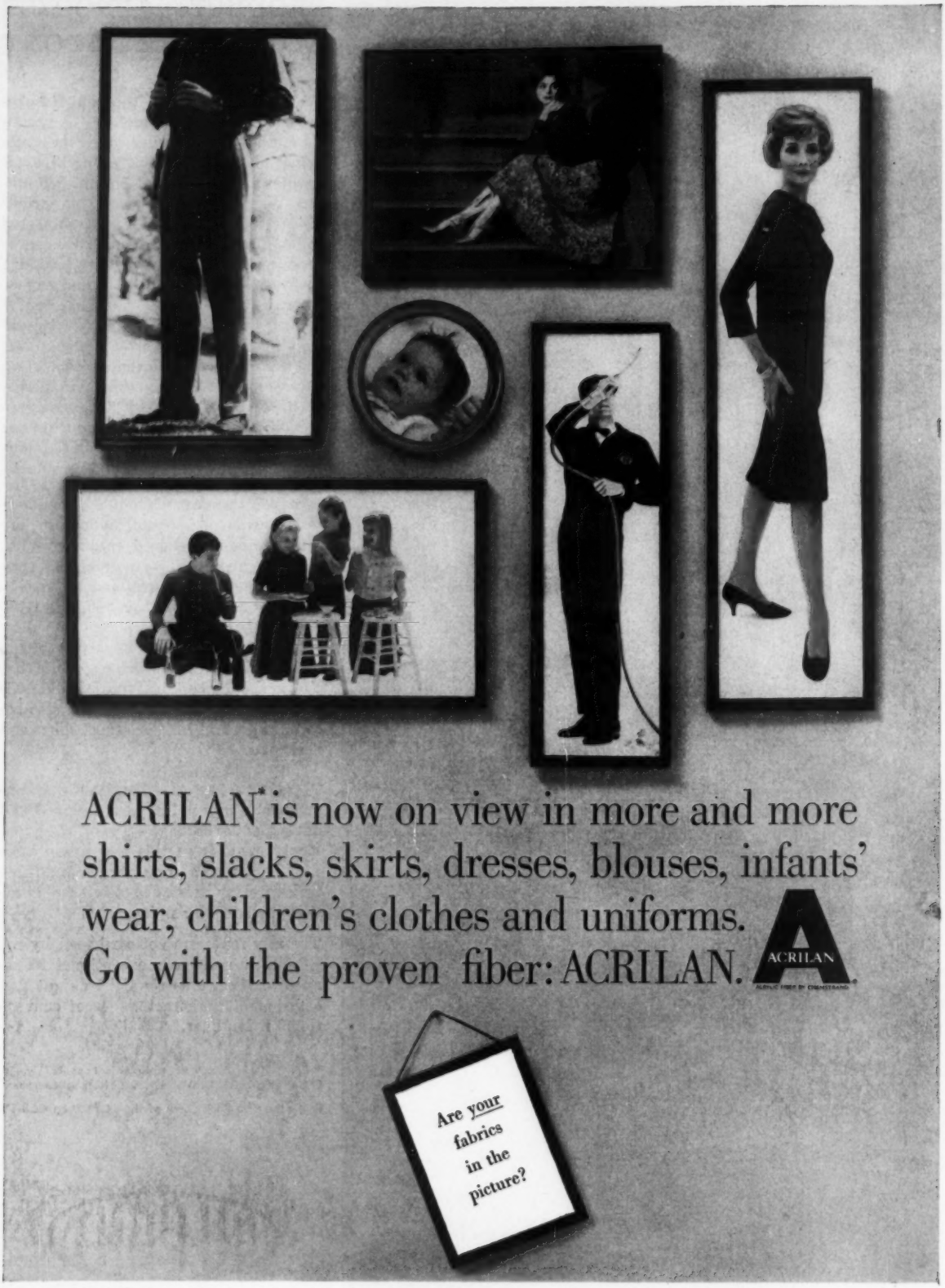
ACRILAN* is now on view in more and more shirts, slacks, skirts, dresses, blouses, infants' wear, children's clothes and uniforms. Go with the proven fiber: ACRILAN.
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Are your fabrics in the picture?

*Registered trademark of The Chemstrand Corporation for its acrylic fiber

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At the Paris Collections—

PARIS—Top designers placed emphasis on soft, flowing fabrics in their spring and summer fashion collections shown last month.

U.S. textile men were pleased with the designs. The trend to longer jackets, longer and fuller skirts, pleats, floor-length ballgowns, big collars, and fabric hats will give the industry a boost in coming months.

Mohair and wool mixtures, often in large loops, are still being used in spring coats. But the mohair rage that was dominant in Paris last winter has subsided. Popular coat fabrics were plain shetlands and flannels, heavy white patterned tweeds, and spongy woolen mixed with silk or reindeer hair. Wide, cobwebby silk was used extensively in evening coats.

Fabrics favored for tailored suits were men's suitings in light gray and beige, pastel flannels, and large-pattern glen plaid. Dressmaker suits were in soft woolens, looped wools, or in heavy silk shantung or raw silk.

Dress fabrics went from sheer mohair jersey and tailored flannels to flimsy silks and laces. Classic silk fabrics were used for daytime dresses, while after-five fashions were in transparent silk and satin organdies, chiffons, laces, and silk gauze. Orlon and Dacron were mixed with wool flannel or crepe for sport models. Prints were also used in many houses. Cotton was widely used, and linen was more popular than in recent seasons.

Although an over-all view of the collections showed definite trends, emphasis varied from house to house.

Christian Dior — Yves St. Laurent, top Dior designer, chose blue, red, and white for his collection. Wool tweeds and light woolens were used for coats and suits. Transparent plain or printed silk chiffons, silk net, and organdy were shown for evening.

Balanciaga . . . chose black, golden brown, beige, orange, and deep pink for his collection. He used black and white tweeds, glen plaids, and two-surface shetlands for coats and suits. Printed shantung, beige linen, crinkled and embroidered silks, and dotted silks were used for daytime dresses, while satin organdy and flowered chiffon were used for evening wear.

Hubert de Givenchy . . . featured beige and golden brown for his daytime clothes. A series of reversible coats was shown with one side plain and the other checked, or two different solid colors.

Lanvin-Castillo . . . featured corals, indigo, lilac, black, and white. Coats and suits were fashioned of bright, soft woolens and alpacas. Silk, satins, and organdies were styled into after-five fashions.

Jacques Heim . . . used earth browns, beige, yellow, orange, and green. Dresses and jacket ensembles were shown in wrinkle-proof wools. Suits were shown in mossy-textured woolens.

Pierre-Cardin . . . used Japanese brocades in a series of evening dresses and white or pale gray flannel for daytime dresses.

Chanel . . . showed a lot of lilac, beige with pink, and navy with red. She fashioned her spring suits of pale tweeds, with plain or printed silk linings and matching blouses. Evening dresses were in black chiffon and lace, white crepe, and embroidered white lingerie.

Jean Patou . . . favored black and white for evening wear. Cocktail dresses in black shantung and pleated crepe were shown.

Pierre Balmain . . . used gray flannel for a gored coat piped in white. Coral and mother-of-pearl were favorite dress colors.

Guy Laroche . . . used solid-color crepes and printed chiffons for dresses. Wool and nylon mesh were used for suits and coats. U.S. buyers liked his knitted-mohair dresses mounted on silk and pale print cocktail dresses.

Nina Ricci . . . was the most popular house with U.S. buyers. Suits were made of cheviots, looped or checked wools, serge, alpaca, and heavy shantung.

Shelley's New Sweaters

Shelley Knitting Mills is now producing sweaters of Wundana, a napped and sheared interlock fabric of 100% Orlon.

Styles include cardigans, pullovers with big collars that tie or drape in a cowl effect, blousons, and scoop-necked sweaters.

New Hospital Blanket

A new type of blanket, Calnamesh, is being made in Great Britain by Slumberland Ltd. It resists dust and retains its appearance and warming qualities despite constant laundering and sterilizing required in hospital use.

Oriented Nylon Strip

Reeves Brothers, Inc., Plastics Div., has announced Reevestrip, the first oriented nylon strip to be commercially produced in the United States.

It is used primarily as a component in the manufacture of power transmission and conveyor belts. Laminated with leather or rubber, the nylon strip gives

strength and flexibility to the belt, while the leather or rubber on the outside provides the grip.

Reevestrip is now available in thicknesses up to ½ in. and in widths up to 3 ins.

Sparkle Chenille Fabrics

Decorative Fabrics, Inc., has expanded production of sparkle chenille fabrics, including a broad range of new designs for apparel and home-furnishings uses. The line now comprises more than 1,500 different flocked patterns with Metalflake, Dobeckmun's metallic-foil sparkle.

Styles include 48-in. broadcloths and polished cottons, nylon sheers, taffetas, and crystals.

Washable Wool-Dynel Fabrics

A new group of washable shrink-resistant woolen blended woven apparel fabrics for men's and boys' wear has been introduced by Chatham Fabrics, Inc., Div. of Chatham Mfg. Co.

These Dyna-Wool fabrics are blends of 65% wool and 35% Dynel and are treated for washability and low shrinkage. The fabrics have high strength and good retention of press.

Chatham Fabrics is offering a 13- to 13½-oz. weight for zip-type jackets and cardigans, a 16- to 16½-oz. construction for suburban or slicker coats, and an 11-oz. weight for slacks. All fabrics are 60 ins. wide.

Acid-Resistant Thread

Bemis Bro. Bag Co. has developed an improved Golden-Ply acid-resistant thread for the manufacture and closure of multiwall and waterproof bags.

The thread is a combination of cotton and highly acid-resistant man-made-fiber filament yarn. Testing shows the thread to have excellent balance of twist, tensile strength up to 16.5 lbs., and alkali as well as acid resistance.

Golden-Ply is manufactured in a single construction for use both in the needle and looper of the sewing machine. It is put up in 2½-lb. cones. The yield is 1,915 yds. per lb.

Lightweight Bondyne Fabrics

Ponemah Mills, Inc., is now working on a group of fabrics for the blouse, dress, and shirt markets in lighter-weight 1-den. rayon and imported cotton Bondyne blends. It will be ready for the spring 1960 apparel market.

Other mills scheduled to begin production of specific Bondyne fabrics under special licensing agreements include: Ivey Weavers, Inc.; Spry & Watson Mills, Inc.; and Warren Div., Graniteville Co.

Pool Cover

Reeves Brothers, Inc., has been granted a U.S. patent (No. 2,870,455) on a protective cover for outdoor swimming pools. The covers are made of special Reevon polyolefin open-weave fabrics and are marketed under the name Pooltex.

The fabric is woven from ultraviolet-stabilized Reevon yarns.

Carpet-Labeling Program

Du Pont Co. has announced that 26 U.S. carpet mills are now participating in the company's labeling program to identify 100% Du Pont carpet nylon. About 112 styles are available from the mills.

If a mill's carpet meets Du Pont's standards after testing, the mill is issued labels.

Du Pont's Raincoat Survey

A new survey conducted for Du Pont by Home Testing Institute indicates that the two most persuasive appeals in selling raincoats are light weight and the ability to stay neat.

Of the 1,000 representative families polled, 48% mentioned light weight, 40% the ability to stay neat looking, 33% year-round wear, and 27% durability.

The survey showed that wash and wear is important to raincoat buyers, even though there are more important features. A total of 71% said wash and wear is an added advantage, and 63% said they would be willing to pay more for a wash-and-wear raincoat.

Knitted-Pile Shoe Trim

Princeton Knitting Mills, Inc., has introduced four new knitted-pile fabrics for boot and shoe trim.

One fabric of acetate and Acrilan with ¼-in. pile has a rubberized backing and is treated with Syl-mer silicone water-repellent finish. It is offered in piles of two densities. All fabrics are 56 ins. wide.

The other three fabrics are of Dynel. One style is a ¼-in., medium-density, 100%-Dynel pile blended and knitted with Reynolds Metal Co.'s aluminum yarn.

Another style has a small all-over spot pattern. It is available in black-and-white or brown-and-white color combinations.

The third is a two-height fabric of Dynel with beard-hair Verel fibers.

Wash-and-Wear Vinyl Fabric

The Goodall Vinyl Fabrics Div., Goodall-Sanford, Inc., has introduced the first completely wash-and-wear vinyl fabric for apparel-end use called Burlskin.

It can be laundered and dried in any type of normal home-laundering and drying appliance or drip dried without any appreciable effect on appearance, hand, colorfastness, or dimensional stability.

New Jersey

Dana Textile Mills has developed a new Arnel and Orlon jersey for the better sports-shirt market called Dan-ella.

The wash-and-wear knitted fabric is being produced for fall selling.

At the Paris Collections—

PARIS—Top designers placed emphasis on soft, flowing fabrics in their spring and summer fashion collections shown last month.

U. S. textile men were pleased with the designs. The trend to longer jackets, longer and fuller skirts, pleats, floor-length ballgowns, big collars, and fabric hats will give the industry a boost in coming months.

Mohair and wool mixtures, often in large loops, are still being used in spring coats. But the mohair rage that was dominant in Paris last winter has subsided. Popular coat fabrics were plain shetlands and flannels, heavy white patterned tweeds, and spongy woolen mixed with silk or reindeer hair. Wide, cobwebby silk was used extensively in evening coats.

Fabrics favored for tailored suits were men's suitings in light gray and beige, pastel flannels, and large-pattern glen plaid. Dressmaker suits were in soft woolens, looped wools, or in heavy silk shantung or raw silk.

Dress fabrics went from sheer mohair jersey and tailored flannels to flimsy silks and laces. Classic silk fabrics were used for daytime dresses, while after-five fashions were in transparent silk and satin organdies, chiffons, laces, and silk gauze. Orlon and Dacron were mixed with wool flannel or crepe for sport models. Prints were also used in many houses. Cotton was widely used, and linen was more popular than in recent seasons.

Although an over-all view of the collections showed definite trends, emphasis varied from house to house.

Christian Dior — Yves St. Laurent, top Dior designer, chose blue, red, and white for his collection. Wool tweeds and light woolens were used for coats and suits. Transparent plain or printed silk chiffons, silk net, and organdy were shown for evening.

Balanciaga . . . chose black, golden brown, beige, orange, and deep pink for his collection. He used black and white tweeds, glen plaids, and two-surface shetlands for coats and suits. Printed shantung, beige linen, crinkled and embroidered silks, and dotted silks were used for daytime dresses, while satin organdy and flowered chiffon were used for evening wear.

Hubert de Givenchy . . . featured beige and golden brown for his daytime clothes. A series of reversible coats was shown with one side plain and the other checked, or two different solid colors.

Lanvin-Castillo . . . featured corals, indigo, lilac, black, and white. Coats and suits were fashioned of bright, soft woolens and alpacas. Silk, satins, and organdies were styled into after-five fashions.

Jacques Heim . . . used earth browns, beige, yellow, orange, and green. Dresses and jacket ensembles were shown in wrinkle-proof wools. Suits were shown in mossy-textured woolens.

Pierre-Cardin . . . used Japanese brocades in a series of evening dresses and white or pale gray flannel for daytime dresses.

Chanel . . . showed a lot of lilac, beige with pink, and navy with red. She fashioned her spring suits of pale tweeds, with plain or printed silk linings and matching blouses. Evening dresses were in black chiffon and lace, white crepe, and embroidered white lingerie.

Jean Patou . . . favored black and white for evening wear. Cocktail dresses in black shantung and pleated crepe were shown.

Pierre Balmain . . . used gray flannel for a gored coat piped in white. Coral and mother-of-pearl were favorite dress colors.

Guy Laroche . . . used solid-color crepes and printed chiffons for dresses. Wool and nylon mesh were used for suits and coats. U.S. buyers liked his knitted-mohair dresses mounted on silk and pale print cocktail dresses.

Nina Ricci . . . was the most popular house with U.S. buyers. Suits were made of cheviots, looped or checked wools, serge, alpaca, and heavy shantung.

Shelley's New Sweaters

Shelley Knitting Mills is now producing sweaters of Wundana, a napped and sheared interlock fabric of 100% Orlon.

Styles include cardigans, pullovers with big collars that tie or drape in a cowl effect, blousons, and scoop-necked sweaters.

New Hospital Blanket

A new type of blanket, Calnamesh, is being made in Great Britain by Slumberland Ltd. It resists dust and retains its appearance and warming qualities despite constant laundering and sterilizing required in hospital use.

Oriented Nylon Strip

Reeves Brothers, Inc., Plastics Div., has announced Reevestrip, the first oriented nylon strip to be commercially produced in the United States.

It is used primarily as a component in the manufacture of power transmission and conveyor belts. Laminated with leather or rubber, the nylon strip gives

strength and flexibility to the belt, while the leather or rubber on the outside provides the grip.

Reevestrip is now available in thicknesses up to ⅛ in. and in widths up to 3 ins.

Sparkle Chenille Fabrics

Decorative Fabrics, Inc., has expanded production of sparkle chenille fabrics, including a broad range of new designs for apparel and home-furnishings uses. The line now comprises more than 1,500 different flocked patterns with Metalflake, Dobeckmun's metallic-foil sparkle.

Styles include 48-in. broadcloths and polished cottons, nylon sheers, taffetas, and crystals.

Washable Wool-Dynel Fabrics

A new group of washable shrink-resistant woolen blended woven apparel fabrics for men's and boys' wear has been introduced by Chatham Fabrics, Inc., Div. of Chatham Mfg. Co.

These Dyna-Wool fabrics are blends of 65% wool and 35% Dynel and are treated for washability and low shrinkage. The fabrics have high strength and good retention of press.

Chatham Fabrics is offering a 13- to 13½-oz. weight for zip-type jackets and cardigans, a 16- to 16½-oz. construction for suburban or slicker coats, and an 11-oz. weight for slacks. All fabrics are 60 ins. wide.

Acid-Resistant Thread

Bemis Bro. Bag Co. has developed an improved Golden-Ply acid-resistant thread for the manufacture and closure of multiwall and waterproof bags.

The thread is a combination of cotton and highly acid-resistant man-made-fiber filament yarn. Testing shows the thread to have excellent balance of twist, tensile strength up to 16.5 lbs., and alkali as well as acid resistance.

Golden-Ply is manufactured in a single construction for use both in the needle and looper of the sewing machine. It is put up in 2½-lb. cones. The yield is 1,915 yds. per lb.

Lightweight Bondyne Fabrics

Ponemah Mills, Inc., is now working on a group of fabrics for the blouse, dress, and shirt markets in lighter-weight 1-den. rayon and imported cotton Bondyne blends. It will be ready for the spring 1960 apparel market.

Other mills scheduled to begin production of specific Bondyne fabrics under special licensing agreements include: Ivey Weavers, Inc.; Spry & Watson Mills, Inc.; and Warren Div., Graniteville Co.

Pool Cover

Reeves Brothers, Inc., has been granted a U.S. patent (No. 2,870,455) on a protective cover for outdoor swimming pools. The covers are made of special Reevon polyolefin open-weave fabrics and are marketed under the name Pooltex.

The fabric is woven from ultraviolet-stabilized Reevon yarns.

Carpet-Labeling Program

Du Pont Co. has announced that 26 U.S. carpet mills are now participating in the company's labeling program to identify 100% Du Pont carpet nylon. About 112 styles are available from the mills.

If a mill's carpet meets Du Pont's standards after testing, the mill is issued labels.

Du Pont's Raincoat Survey

A new survey conducted for Du Pont by Home Testing Institute indicates that the two most persuasive appeals in selling raincoats are light weight and the ability to stay neat.

Of the 1,000 representative families polled, 48% mentioned light weight, 40% the ability to stay neat looking, 33% year-round wear, and 27% durability.

The survey showed that wash and wear is important to raincoat buyers, even though there are more important features. A total of 71% said wash and wear is an added advantage, and 63% said they would be willing to pay more for a wash-and-wear raincoat.

Knitted-Pile Shoe Trim

Princeton Knitting Mills, Inc., has introduced four new knitted-pile fabrics for boot and shoe trim.

One fabric of acetate and Acrilan with ¼-in. pile has a rubberized backing and is treated with Syl-mer silicone water-repellent finish. It is offered in piles of two densities. All fabrics are 56 ins. wide.

The other three fabrics are of Dynel. One style is a ¼-in., medium-density, 100%-Dynel pile blended and knitted with Reynolds Metal Co.'s aluminum yarn.

Another style has a small all-over spot pattern. It is available in black-and-white or brown-and-white color combinations.

The third is a two-height fabric of Dynel with beard-hair Verel fibers.

Wash-and-Wear Vinyl Fabric

The Goodall Vinyl Fabrics Div., Goodall-Sanford, Inc., has introduced the first completely wash-and-wear vinyl fabric for apparel-end use called Burlskin.

It can be laundered and dried in any type of normal home-laundering and drying appliance or drip dried without any appreciable effect on appearance, hand, colorfastness, or dimensional stability.

New Jersey

Dana Textile Mills has developed a new Arnel and Orlon jersey for the better sports-shirt market called Dan-ella.

The wash-and-wear knitted fabric is being produced for fall selling.

#6 of a series . . . . . .

caprolan®

TEXTURED YARN SEMINAR

TENSIONS NEED ATTENTION!

If your mill is moving ahead with the trend to textured filament yarns, you know this simple truth:

FACT: Textured Filament Yarns And Spun Yarns Are Not The Same

It follows, therefore, that different methods of handling textured filament yarns are necessary for best results. Take the matter of tensions, for example:

Because textured filament yarns are "precise" yarns, the use of post tensioning devices at the creel is very important if streaks in finished fabric are to be avoided. Equal tensions must be obtained, and every end should be checked carefully.

The results obtained from textured filament yarns pay off many times over for the simple adjustments required. We'll be happy to help you off to a good start in the use of Textured Caprolan* in your product lines. Call our technical service, end-use development, and fiber application laboratory staffs for assistance . . . any time.

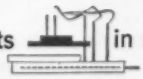
Fiber Sales and Service Allied Chemical *National Aniline Division*
261 Madison Avenue, New York 16, N. Y.

**Trade Mark—Allied Chemical's polyamide fiber*

For more data, circle A-72 on Reader Service Card

BETTER LUBRICATION BEGINS WITH ALEMITE **OIL-MIST**

How to cut lubricant costs up to 90% — and increase production!

Large and small plants  in many industries are making important maintenance savings while actually boosting machine output—with Alemite Oil-Mist Automatic Lubrication.

The Oil-Mist system atomizes oil into air-borne particles, carries them through tubing to all lubrication points and bathes every moving surface with a cool film of clean lubricant while machines operate. It provides constant, uniform, completely automatic lubrication to a few or to hundreds of bearings. Accurate and foolproof, Oil-Mist eliminates guesswork. No bearing can be overlooked or over-lubricated.

Three types of Oil-Mist fittings apply lubricant in the form required. Either a mist fitting or a condensing fitting or a spray fitting, is used to lubricate any lubrication point.

An Oil-Mist system can be applied to any new or installed machine. Find out in detail how it cuts costs, reduces man-hours and machine downtime, extends bearing life, and increases production.

Write Alemite, Dept. X-39, 1850 Diversey Parkway, Chicago 14, Illinois.

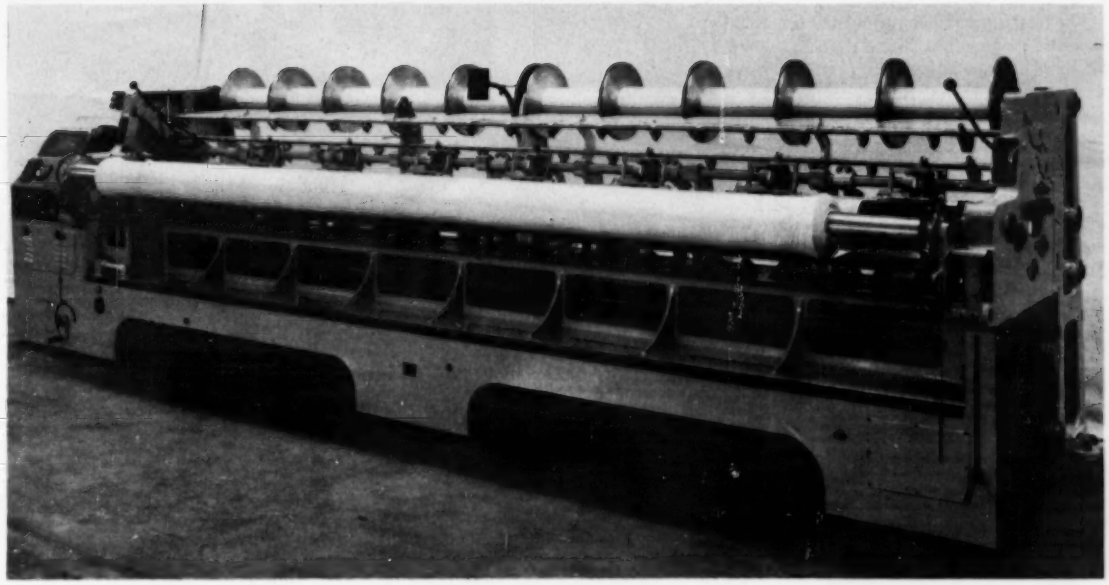
Makers of these automatic centralized lubrication systems: Oil Mist · Accumatic · Accumite

1850 Diversey Parkway, Chicago 14, Illinois

ALEMITE DIVISION **STEWART-WARNER CORPORATION**

Symbol of **SW** Excellence

For more data, circle A-73 on Reader Service Card



Tricot-Knitting Machine

A 170-in. tricot-knitting machine, Excentra, that operates at 950 stitches per minute on an unlimited number of patterns is being manufactured by Robert Reiner, Inc., Weehawken, N. J.

Speed of 950 stitches per minute on jersey fabrics is being sustained in mill operation.

The manufacturer says the machine has been proved in mill operation on the entire range of commercially used tricot yarns: 15-den. monofilament nylon, 40-den. unthrown nylon, and all thrown nylons, Dacron, acetate, viscose, etc.

Seven features of the machine are:

1. Vibration-free, single-unit, welded-steel frame that's completely free from distortion.
2. The knitting motion is actuated by eccentrics and crank levers. There are no cams, cam rollers, or countercams.
3. A positive take-up is for all commercial-tricot qualities and yields.
4. An automatic power-driven let-off with indicator lamps gives accurate yarn control.
5. There's automatic lubrication throughout for simplified maintenance.
6. There's a chain-link or pattern-wheel drive.
7. Knitting elements are externally adjustable for maximum convenience.

The machine is suitable for beam-flange diameters from 14 to 30 ins. The unobstructed yarn path is laid out on 42-in. centers for larger warps.

All control instruments such as take-up, let-off, production counter, speed indicator, etc., are grouped compactly at the pattern-wheel end of the machine.

Other standard equipment is a quick-stop mechanism, adjustable-speed three-phase motor, automatic yarn-control signal system, speed indicator, total-production counter, and three-shift stitch counter.

The Excentra machine will be shown at the Knitting Arts Exhibition.

Circle T-1 on Reader-Service Card

Lever Grease Gun

An all-steel grease gun and disposable 14½-oz. grease cartridge are being offered by Lincoln Engineering Co., 5701 Natural Bridge Blvd., St. Louis, Mo. The gun can be loaded with the cartridge in just 20 secs.

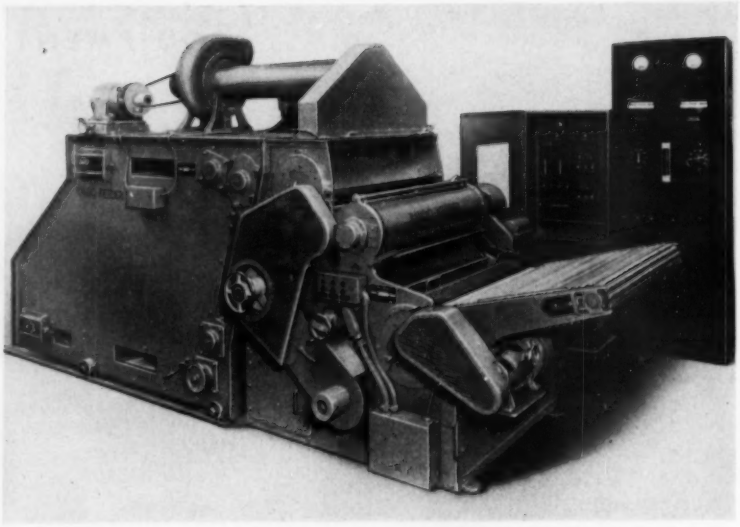
The gun has these features: (1) easily develops 10,000 psi. grease pressure, which is enough to open the tightest bearing; (2) delivers all pressure lubricants in any weather; (3) there's quick clean reloading with standard grease cartridges, with filler pump, or by suction with no following adjustments; (4) operation is easy with lever action or with a hydraulic coupler extension for hard-to-reach fittings; and (5) its heavily plated steel construction prevents rust.

Circle T-2 on Reader-Service Card

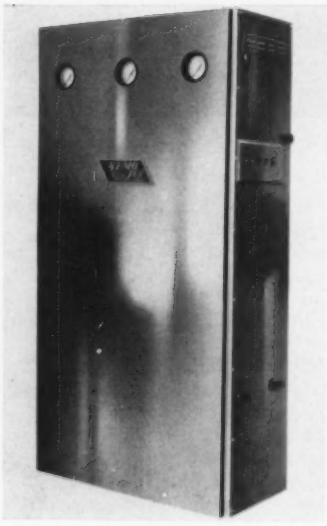
Nonwoven Equipment

Auxiliary equipment has been added to the Rando-Feeder and Rando-Webber, used for manufacturing nonwoven fabrics, by Curlator Corp., 501 W. Commercial St., East Rochester, N. Y.

The instruments are mounted in a floor-stand panel. There's: (1) a mechanical pressure gauge to indicate suction pressure in inches of water across the Rando-Feeder air bridge and condenser combination; (2) three-way gauge to indicate suction, positive pressure, and differential pressure in inches of water; (3) electrical tachometer to indicate the lickerin speed and electrical tachometer to indicate feet per minute or yards per hour; (4) humidity instrument; and (5) antistatic fluid-feed and atomizing system to precondition the fiber.



Circle T-3 on Reader-Service Card



Slasher-Size Cooker

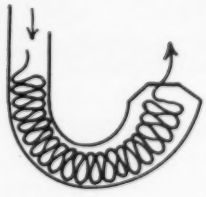
Cooking of slasher size in large batches is eliminated with the Nemo Jet Cooker now being manufactured and sold by Cocker Machine & Foundry Co., Box 431, Gastonia, N. C. This company has acquired these rights from Nemo Industries, Inc., Atlanta, Ga.

With this cooker, the cold size is mixed in the usual way and is then piped to the cooker, where just the needed amount is cooked instantly. This method eliminates (1) dumping of unused cooked size, (2) lumps and hard size, and (3) the need for controls for cooking and storage kettles.

Installation is simple, and steam requirements are small. The elimination of waste reduces stream pollution.

Circle T-4 on Reader-Service Card

Flared J-Box



Rub marks, plucking, and fraying of fabric are eliminated in a J-box developed by Riggs & Lombard, Inc., Foot of Suffolk St., Lowell, Mass. The self-supporting unit is designed so that the delivery end is flared in both depth and width, which gives the fabric more room at the point of greatest pressure. Construction is of stainless steel throughout.

Circle T-5 on Reader-Service Card

Spherical Roller Bearings

A line of self-aligning spherical roller bearings with the following features has been developed by Link-Belt Co., Prudential Plaza, Chicago 1, Ill.: maximum diameter and quantity of convex rollers for each bearing size, precision-machined centrifugally cast bronze retainers, and high heavy inner-race shoulders.

All components are optimum balanced to assure long, carefree bearing performance on the most severe installations.

The bearings are being introduced initially in bore sizes ranging from 1.5748 in. to 11.0236 ins. with dynamic load ratings up to 288,000 lbs.

The bearings are also available in pillow blocks in bore sizes ranging from 1 7/8 in. to 10 ins.

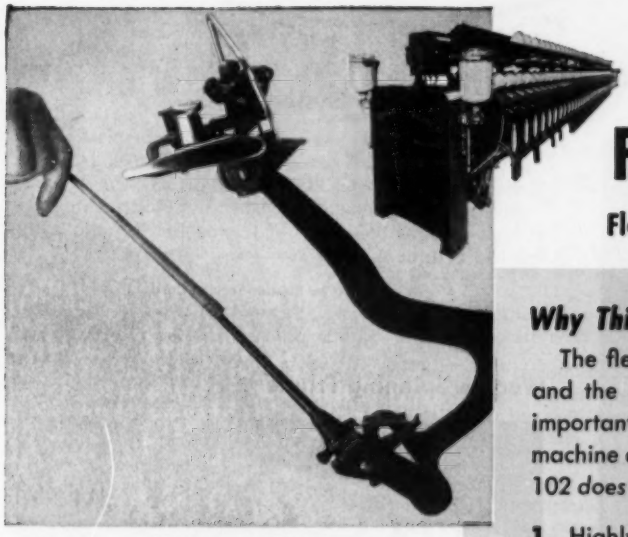
Circle T-6 on Reader-Service Card

Plastic Loom Picker

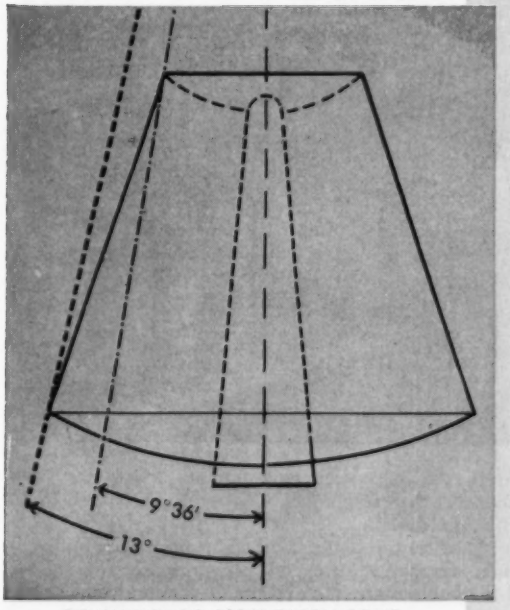
A line of plastic loom pickers has been added by Steel Heddle Mfg. Co., Southern Shuttles Div., Paris Station, Greenville, S. C.

The picker, Durapic, is made of a long-chain, high-molecular-weight, polyethylene material. It lasts a long time to cut replacement cost. Trial-basis, small-quantity orders are presently being accepted.

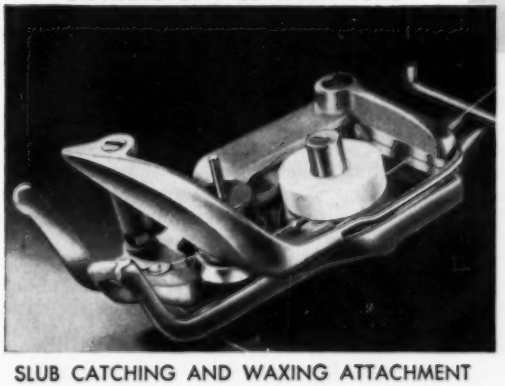
Circle T-7 on Reader-Service Card



TILTING BOBBIN PIN FOR SOFT TWIST COPS WHERE SINGLE BALLOON AND MINIMUM TENSION ARE REQUIRED



DRAWING OF 9°36' TAPER CONE



SLUB CATCHING AND WAXING ATTACHMENT

FOSTER MODEL 102

Flexibility — Economy — Quality Winding

Why This Machine Produces a Quality Package

The flexibility (adaptability to changing conditions) and the economy of the Foster Model 102 are very important, but they would be of far less value if the machine did not produce a quality package. The Model 102 does produce a quality package and here's why: —

1. Highly efficient slub catchers automatically inspect the yarn.
2. The 9° 36′ convex base cone promotes free delivery on the knitting machine — prevents underwinding and "nipitis".
3. Yarn conditioning and waxing attachments give proper softness and lubrication to yarn.
4. Ribbon breaker prevents ribbon wind.
5. Idler shell on winding drum prevents burning or chafing of yarn at nose of cone. Hairline fit prevents cutting.
6. Adjustable angle of wind assures properly formed packages which hold their shape in transit.
7. Even the softest twist yarns can be wound with minimum breakage, because they can be wound with no tension, if necessary.

Learn also about the flexibility and economy features of the Model 102. Write for Bulletin A-95-A.

FOSTER MACHINE COMPANY

A Yarn Winder for Every Purpose

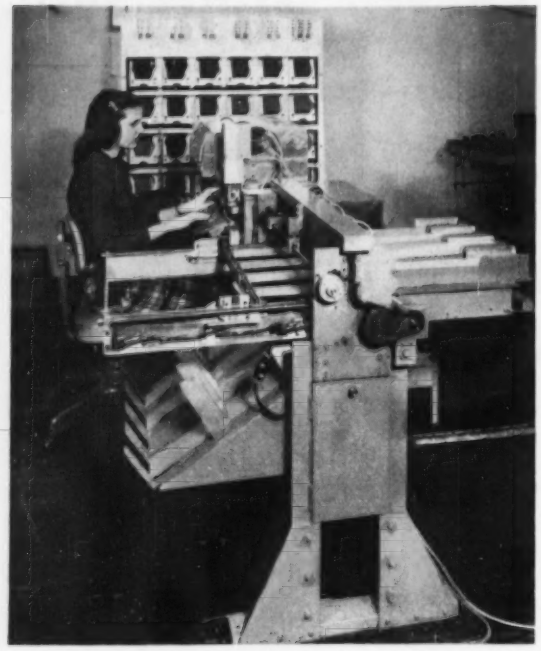
Westfield, Massachusetts, U.S.A.

Southern Office — Johnston Bldg., Charlotte, N. C. *Canadian Representative* — Ross Whitehead & Co., Ltd., 2015 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ontario • *European Representative* — Muschamp Textile Machinery Ltd., Keb Lane, Bardsley, Oldham, Eng.

A Member of American Textile Machinery Association

636-B

Jacquard-Card Machine



An electronically operated card-cutting machine for loom jacquards, invented by Alphonse Velghe, is being sold by Garden State Looms, Jacardmatic Div., P. O. Box J, Allendale, N. J. The machine is now being used for fine-index work in a weaving mill.

The machine scans a sketch. An operator closely follows the machine scanning and manually depresses keys to activate weaves, groups of weaves, binders, etc., which are translated to proper holes in the jacquard card.

The designer is completely eliminated. Punching is faster than with the present method; and an unskilled operator, usually a woman, is used.

Cards for four shuttles can be punched simultaneously. Production is 300 to 400 cards per 8-hr. day.

Circle T-8 on Reader-Service Card

Yarn-Conditioning Attachment

A yarn-conditioning and marking attachment for the Abbott quiller has been introduced by Mona Industries, Inc., Paterson 4, N. J.

The attachment, which has no moving parts, consists of a liquid-transfer surface fed from a shallow trough below the table.

The bobbin is pushed across the transfer surface where the yarn picks up 3 to 15% moisture. Amount of moisture is controlled by varying the size of the surface with a sliding cover.

The regular transfer surface can be replaced with a special marking surface that prints identification patterns on the yarn in one or more tints.

Circle T-9 on Reader-Service Card

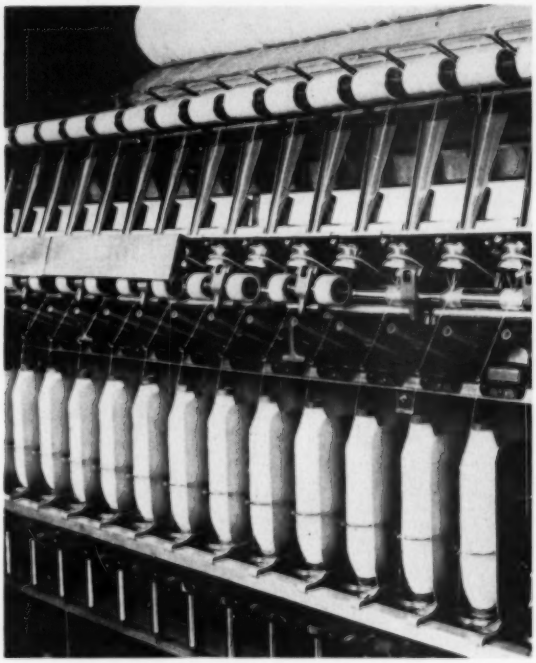
Carrier Delivery System

Heavy, bulky products can be inserted in plastic bags easily by means of a carrier system developed by Tele-Sonic Packaging Corp., 208 W. 27th St., New York, N. Y.

Multiple-unit products can be easily inserted into bags at high speed without fear of tearing the bag and without loss of time.

Circle T-10 on Reader-Service Card

Woolen Spinning Frame



An improved woolen ring-spinning frame has been announced by Johann Jacob Rieter & Co. Ltd., Winterthur, Switzerland.

A major feature is the combined ring- and spindle-rail motion whereby the ring rail performs the winding lift and the bobbins are filled by the descending spindle rail. Throughout the building operation, balloon length and yarn tension are under rigid control.

Underwinding is triggered automatically, and the frame is stopped quickly by an automatic drum brake when the bobbins are full.

Other features include:

Creel variator that permits stepless variation of roving tension

Twist tubes with needle trumpets to assure even transmission of pretwist

Ball-bearing top rolls with spring tension

Suction cleaning with individual tube intakes

Combined antiballoon rings and separators

Self-lubricating rings, roller-bearing spindles, elastic-tube spring clutch, and four-spindle tape drives with ball-bearing pulleys.

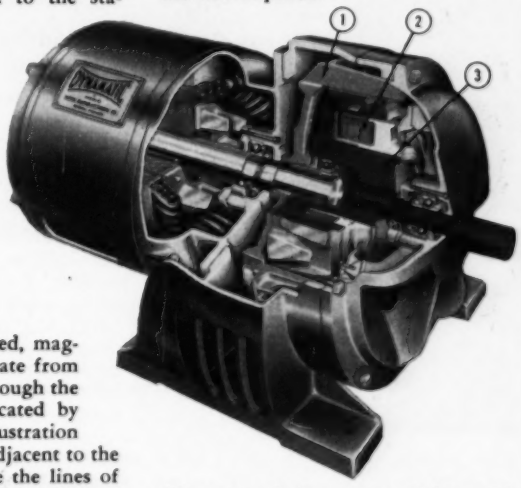
Circle T-11 on Reader-Service Card

HOW DYNAMATIC® Drives Provide Infinitely Adjustable Speed with AC Power

Dynamatic Ajusto-Spede® and Dynaspede® Drives operate from an alternating current power source and are infinitely adjustable from zero RPM to full output speed. Accurate control of output speed is obtained by varying the current in a single field coil.

Each Dynamatic Drive consists of a constant speed AC motor and an eddy-current coupling. Torque developed in the motor is transmitted through the coupling by electromagnetic attraction between its driving and driven members.

The driving member, or drum (1), is mounted on the end of the motor shaft and surrounds the rotor, or driven member (3). The drum is free to rotate independently of the rotor until current is applied to the stationary field coil (2).



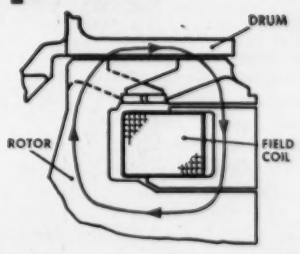
1. Input Drum Assembly
2. Stationary Field Assembly
3. Output Rotor Assembly

As the field coil is excited, magnetic lines of force emanate from the field coil and flow through the rotor and drum as indicated by arrows in cross-section illustration (A). Poles on the rotor adjacent to the smooth drum concentrate the lines of force into localized areas of "high flux" density in the drum's inner surface, shown in illustration (B). As the drum rotates about the rotor, these high flux areas sweep the inner surface of the drum, causing a variation of flux density that generates an eddy-current field in the drum's inner surface. Magnetic attraction between this eddy-current field and the rotor poles causes the rotor to rotate with the drum.

The torque transmitted from the drum to the rotor varies with the current applied to the field coil and with the "slip", or difference in speeds between the drum and rotor. Speed control with eddy-current equipment is obtained with a control system that adjusts field coil current to deliver the required torque at the desired slip.

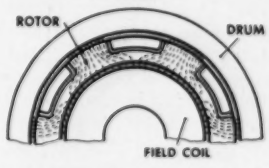
The control systems used with Dynamatic Eddy-Current Equipment operate on alternating current and require no special power source. Because of the low power required for field coil excitation, rectifying of field coil current is easily accomplished electronically. Expensive motor-generator sets are not required.

The control features available with Dynamatic Eddy-Current Equipment include constant speed regulation, acceleration control, torque regulation, cascading of multiple units, inching and threading, and numerous others as required by individual applications. Dynamatic Eddy-Current Equipment is ideally suited to automatic control.



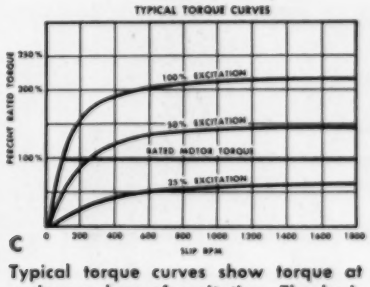
A

Flow of magnetic lines of force through rotor, drum, and stationary field.



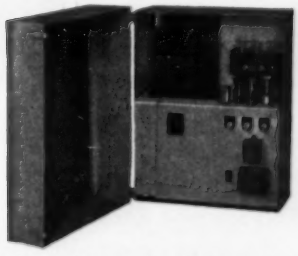
B

Concentration of magnetic lines of force by the rotor poles.



C

Typical torque curves show torque at various values of excitation. The horizontal line is rated motor torque.



D

The electronic control systems used with Dynamatic Eddy-Current Equipment do not require a special power source or motor-generator sets.

Send for your copy of Bulletin D-582 which gives detailed information on Dynamatic Eddy-Current Equipment.

EATON®

EATON DYNAMATIC DIVISION
MANUFACTURING COMPANY
3307 FOURTEENTH AVENUE • KENOSHA, WISCONSIN

For more data, circle A-75 on Reader Service Card

Raschel Warp-Knitting Machine

A raschel warp-knitting machine primarily for making elastic-net fabrics is being sold by J. Hobley & Co. Ltd., Western Rd., Leicester, England. The machine knits 600 to 700 courses per minute.

The machine is made in widths up to 120 ins. in many gauges; the standard width is 100 ins., and the most popular gauge is 36 (18 needles per inch).

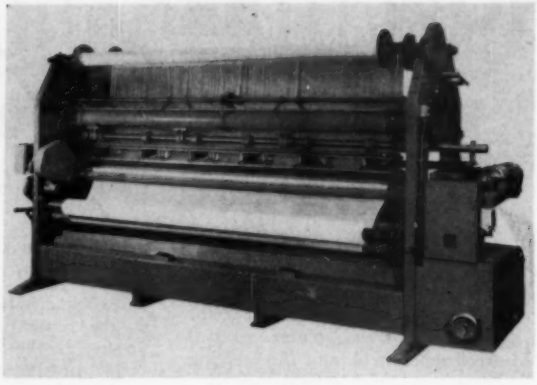
Outstanding points of design are: (1) stable construction for great rigidity, and (2) great accessibility by lowering the trick plates, needle-bar guide assembly, and other loop-forming parts.

Needles have shortened stems and guides and are lightweight; eyes are elongated lengthwise.

The camshaft has heavy-duty roller bearings, and all cam followers are synthetic-resin-bonded fabric equipped with needle roller bearings. All other shafts not mounted in ball bearings are running in oil-retaining bronze bushings.

Two 14-in.-dia. warp beams make the elastic fabric: one supplies the knitting warps to the two front bars, and the other supplies elastic to the back bars. This arrangement can be varied to your own requirements.

The knitting beam is driven by an internal-expanding brake operated by the tension rods, and the elastic beam is driven by a clutch-controlled unit. A power-differential

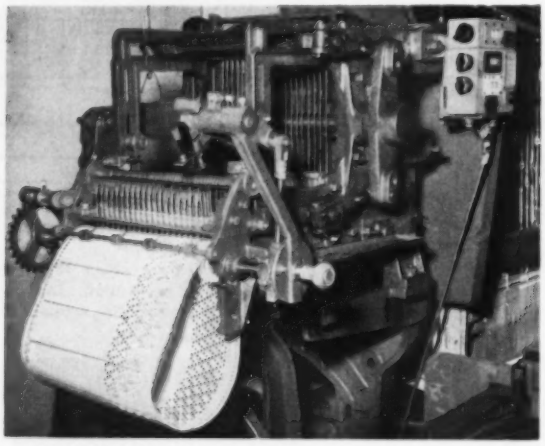


drive can be furnished if desired.

The machine can be readily adapted to make other nets and warp-knitted fabrics such as tulle and marquisette nets.

An extra guide bar can be added to the machine quickly at your mill to make simple figures or inlays. This arrangement reduces the machine speed slightly.

Circle T-12 on Reader-Service Card



Paper Control for Dobbies

Paper indication for all modern dobbies now in use in textile mills is available from Crompton & Knowles Corp., Worcester 1, Mass. This indication is applicable to No. 7 dobbies with 20 and 25 harnesses, single cylinders, and double index. Paper indication is also used with multipliers.

Up to 2,000 loom picks are made with only 20 ft. of paper for an average of 100 picks per foot of paper. There's a reduction of 70% in the length of a pattern chain over wood patterns.

The paper patterns reduce the cost of: pattern-chain components 97%, producing the initial pattern 58%, and producing duplicate patterns 78%.

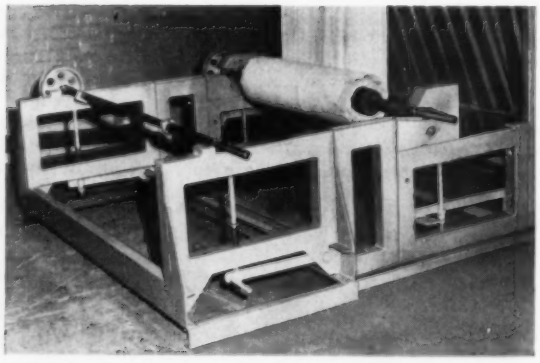
Circle T-13 on Reader-Service Card

Roll-Storage Rack

A rack that accommodates two rolls of cloth is designed to be used ahead of continuous feeding machines.

When the roll in process runs out, the second roll is run into place automatically as the operator steps on a foot-operated release. The center bar from the empty shell is automatically ejected by the engagement of a second foot-operated release mechanism. The unit is available from Mount Hope Machinery Co., Taunton, Mass.

Circle T-14 on Reader-Service Card



For more data, circle A-76 on Reader Service Card →

THE NEED: An economical, expendable tube for shipping yarn

The textile industry needed to replace heavy, permanent-type dye tubes with lightweight, non-returnable carriers to reduce the cost of transportation in shipping yarn.

Sonoco recognized this need and assigned the job to its research department for a solution. As a result, Sonoco developed an economical one-time-use transfer, or push-out, paper tube with critical dimensions and controlled stability. Not only was the initial need fulfilled, but this new carrier made it possible to greatly reduce the inventory of stainless steel dye tubes formerly required. And, in many cases, the Sonoco transfer tube saved a costly rewinding operation.

Only Sonoco, with its modern laboratory, engineering and production facilities, could have answered this need with an economical, efficient carrier. It is typical of countless cases where Sonoco leadership in the development of textile paper carriers, based on 60 years' experience, has benefited the industry. Let Sonoco help you!

SONOCO

Products for Textiles

SONOCO PRODUCTS COMPANY

Main Office—Hartsville, S. C. • Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Cal. • Atlanta, Ga. • Granby, Quebec • Brantford, Ontario • Mexico, D. F.

Franklin Process COLORS

Their Quality is **LABORATORY CONTROLLED**

Consistent quality of Franklin Process Colors — as to accuracy of shade and softness of finish for knitting — is no accident. That's because formulas are established in our laboratory before the yarn goes to the dye house. Once established, a shade can be duplicated without guess work. Re-processing is cut to a minimum and the original quality of your yarn is preserved.

Each one of our dye houses has a completely equipped modern laboratory, including a battery of sample dyeing machines. Thus new formulas are quickly determined and delivery is expedited. In addition to these laboratory facilities, the application laboratory in Philadelphia, shown on the opposite page, does research work on new dyes and fibers for all four plants.

This is only one of many reasons why Franklin Process Yarn Dyeing Service enjoys an enviable reputation. Other reasons are as follows:—

- **FRANKLIN SPRING.** This spring permits harder packages to be compressed less and softer packages to be compressed more into a column of uniform density. Uniform penetration of the dye liquor and uniform shades result.
- **LARGE DYE BATCHES.** If you need long runs of one shade, we can supply that shade in ONE DYE BATCH— up to 2500 lbs. in size. You don't have to contend with mixed dye batches.
- **MULTIPLE DYEING MACHINES.** With 14 different sizes of dyeing machines, we can fit the machine to the poundage of yarn required. The proper ratio of dye liquor to yarn is maintained. The chances of offshade work are minimized.
- **UNEQUALLED EXPERIENCE.** There is no substitute for experience in yarn dyeing. We have unequalled experience. In 48 years we have dyed more than 700 million lbs. of yarn, for practically every branch of the textile industry.
- **CONVENIENTLY YOURS** — that's Franklin Process Service. It's available from 4 plants in 4 convenient areas. Get in touch with our nearest plant or office. Get the best in service and known quality— quality you can talk about.

Franklin Process
A DIVISION OF INDIAN HEAD MILLS, INC.

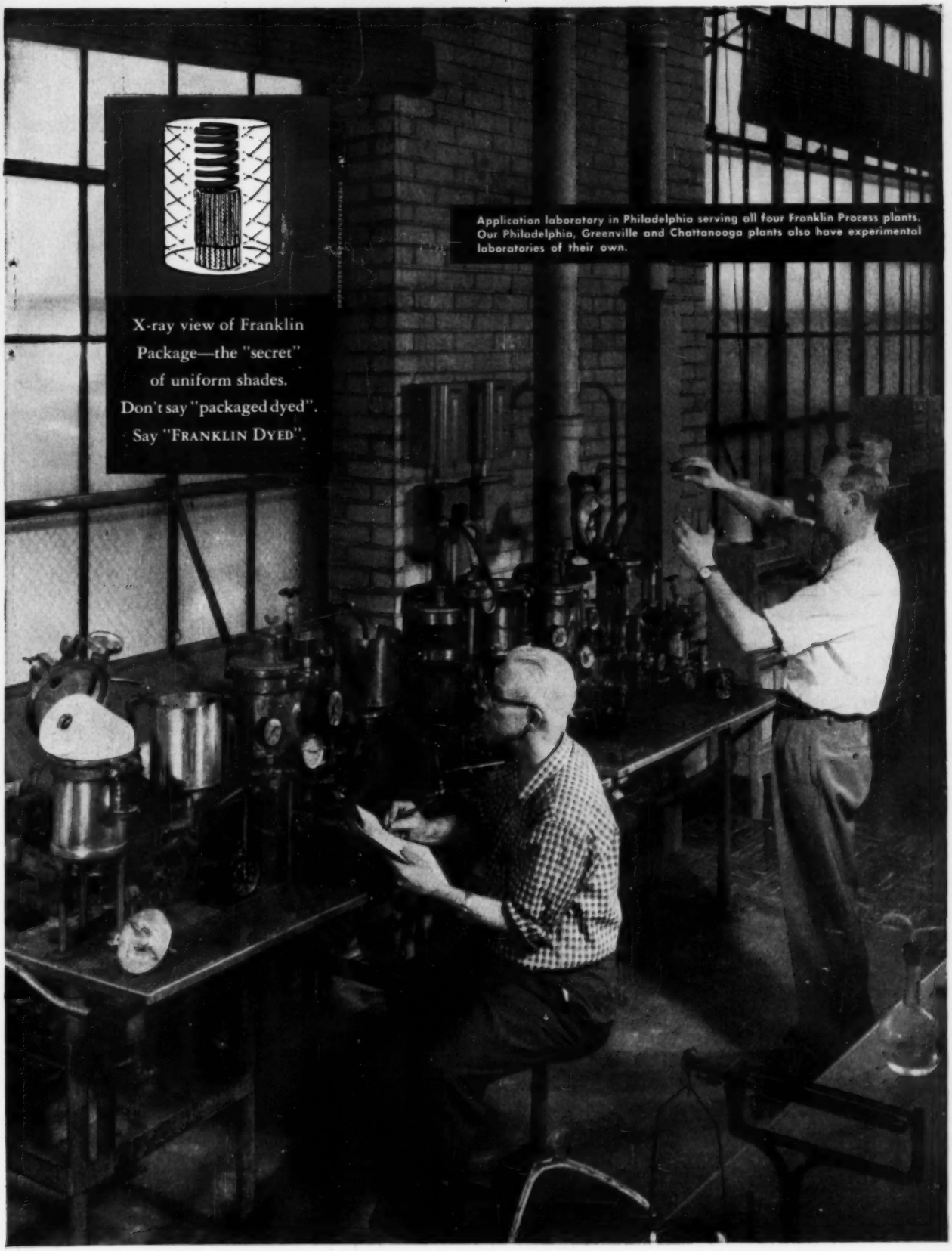
Dyers of cotton (carded, combed, mercerized) • Orlon* (yarn and tow) • Acrilan • Dacron† • Ban-Lon® • Helanca • Spun Nylon Spun Rayon • Blends • Wool & Worsted Yarn—all yarns on Franklin compressible spring exclusively.

PHILADELPHIA • GREENVILLE
CHATTANOOGA • FINGERVILLE, S. C.
New York Office—111 West 40th Street
Providence Office—611 Turks Head Bldg.

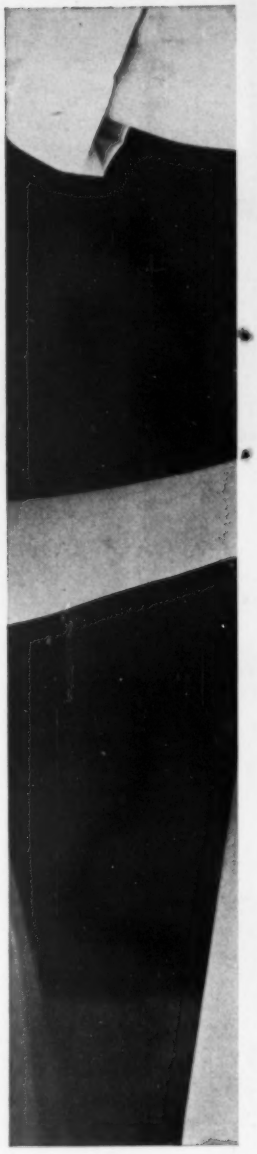
*Trademark for Dupont's acrylic fibre.
†Trademark for Dupont's polyester fibre.

567-8

For more data, circle A-77 on Reader Service Card


X-ray view of Franklin Package—the "secret" of uniform shades. Don't say "packaged dyed". Say "FRANKLIN DYED".
Application laboratory in Philadelphia serving all four Franklin Process plants. Our Philadelphia, Greenville and Chattanooga plants also have experimental laboratories of their own.

ARNEL'S "STAMPS" OF CONSUMER APPROVAL



Consumer acceptance of Arnel triacetate works for you just as resultfully as you work with Arnel. You know Arnel for its ease of processing in the mill. The consumer knows Arnel for its ease-of-care. You know Arnel can be handled on all standard mill equipment. Mr. and Mrs. Consumer know that properly constructed Arnel fabrics offer both beauty and performance.

You see one side of Arnel—consumers the other. Let's consider MACHINE WASHABILITY.

To the consumer:

1. Almost all properly constructed fabrics containing 50% or more Arnel triacetate are completely machine washable.
2. *No* special care is necessary as regards the use of a detergent in laundering Arnel fabrics.
3. All 100% Arnel fabrics are unaffected by bleaches used in ordinary household or commercial laundry procedure.
4. All fabrics carrying the official Arnel symbol have been pretested for performance claimed—including machine washability. (Tests are conducted free of charge by the Celanese Corporation of America.)

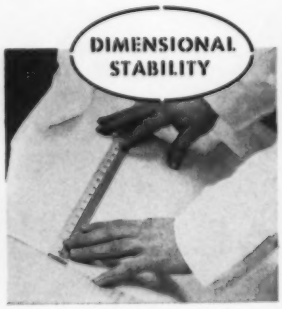
To take advantage of the great consumer acceptance of Arnel, let Celanese work with you to develop new constructions in Arnel fabrics. Booklets 13A and 14A, containing the important technical procedure and facts about Arnel, are available by writing Celanese Corporation of America, Box 1414, Charlotte, N.C.

Celanese® Arnel®

District Sales Offices:
180 Madison Ave., New York 16, N.Y.
Room 10-141 Merchandise Mart, Chicago 54, Ill.
P. O. Box 1414, Charlotte 1, N. C.
200 Boylston St., Chestnut Hill 67, Mass.
3179 Maple Drive N. E., Atlanta 5, Ga.

Export Sales:
Amcel Co., Inc., and Pan Amcel Co., Inc.
180 Madison Ave., New York 16, N.Y.

In Canada:
Chemcel Fibres Limited
1600 Dorchester Street West, Montreal, Quebec



Arnel . . . a

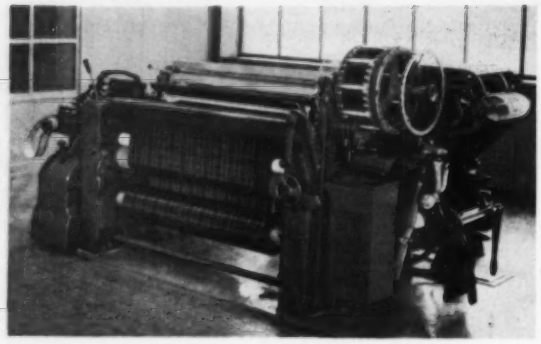
#1 in a series of ads reviewing the "reasons-why" for the consumer acceptance of Arnel.

ARNEL*

*This is the official Arnel symbol—evidence that this fabric of this new triacetate fiber has been pre-tested for performance claimed.

Celanese contemporary fiber

Four-Color-Filling Loom



An automatic bobbin-changing loom for multicolor filling has been announced by Adolph Saurer Ltd. AG, Arbon, Switzerland. The loom weaves rayon, nylon, and silk. It has 5-in. reed space, a rotary magazine, eight-shaft harness motion, and automatic let-off for 25-in.-dia. yarn beam.

A star-shape yarn separator divides the four strands of yarn at the drop-box end of the loom.

At the magazine end, an outside scissors cuts the filling ends after a gripper has grabbed the yarn between the selvage and the shuttle. A rotary brush collects the loose yarn.

Parallel picking arrangements at both ends of the loom eliminate lubrication near the shuttle to prevent soiled fabric. Looms are equipped with Loepfe Optical-electronic bobbin feelers.

Circle T-15 on Reader-Service Card

Smaller, Stronger V-Belts

Development of a stronger line of industrial V-belts with 40% more pulling power has been announced by Gates Rubber Co., 999 S. Broadway, Denver 17, Colo.

Three of these belts, Super HC, will replace five old ones. And because they are smaller than the old ones, they will reduce the size of pulleys to reduce the over-all floor space taken up by belt drives.

The smaller belts are tougher than older ones and save up to 20% in replacement cost.

Circle T-16 on Reader-Service Card

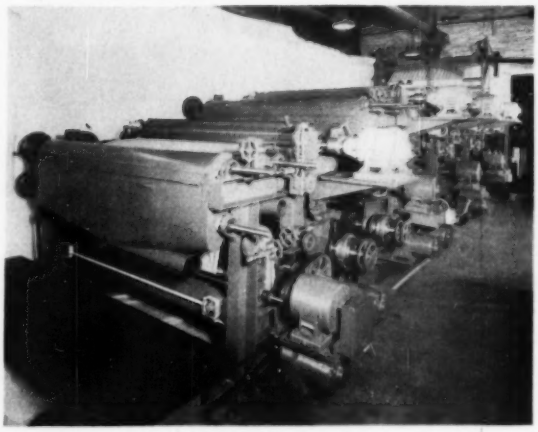
Yarn-Testing Equipment

Textile testing equipment developed by the British Rayon Research Assn. is now available to U. S. textile mills through an arrangement made with Stellamcor, Inc., 10 E. 43rd St., New York 22, N. Y. While the equipment was developed primarily for use by producers of filament yarns, the instruments have wider use.

The six units initially being made available are an electronic yarn-filament counter, an instrument that facilitates measuring and recording yarn tension continuously, a strainometer for measuring whether yarn has been overstrained during the winding process, a vibrascope for quickly determining yarn denier, a warp tension balance for measuring difference in tension between two yarns, and a crimp tester.

Circle T-18 on Reader-Service Card

High-Speed Shear



Fabrics can be sheared at up to 90 yds. per min. on a shear developed by Riggs & Lombard, Inc., Foot of Suffolk St., Lowell, Mass.

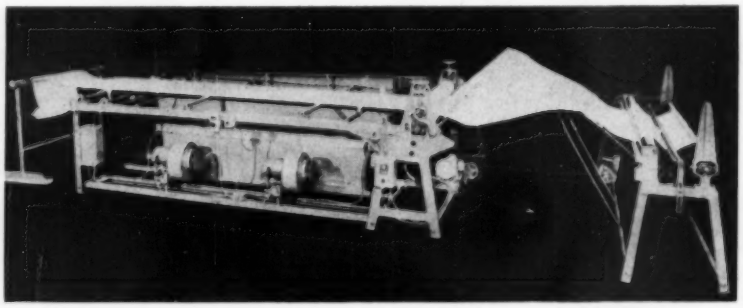
The shear will handle woolens, worsteds, blends of natural and man-made fibers, or fabrics made from man-made fibers alone. The model is marketed as the Equinox high-speed shear.

Circle T-19 on Reader-Service Card

Slitter and Decurler

A machine that slits tubular knitted fabrics and applies a curl-preventing resin to the edges has been marketed by Joseph Pernick Co., Inc., Maspeth, L. I., N. Y. The unit also dries the resin applied to the cloth and batches the fabric in rolls.

Circle T-17 on Reader-Service Card

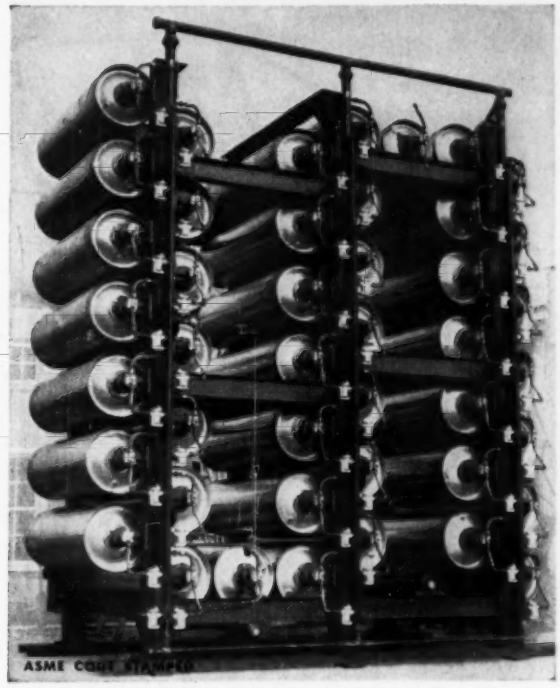


CONTINUED ON PAGE 162

PROVEN SUPERIOR

In actual day to day operation where the real worth of machinery is tested, Sims new Stainless Steel 75 psi reversed dished head 44 Dry Cans* are proven superior. They require less horse power . . . are easier on bearings . . . and save floor space with no loss in drying surface. And, the chain drive is on one side of the can, while the steam fittings are on the other side . . . permitting maintenance of the drive without time lost waiting for steam pipes to cool.

Furnished Teflon-coated if desired.



Fabricated and installed at Lanett Bleachery and Dye Works, Lanett, Alabama by Sims Metal Works.

FOR ECONOMY AND QUALITY

Our modern and progressive metal-working shops, our skilled craftsmen, our know-how—these are guarantees of quality. For custom tailoring of stainless steel, call, wire, or write *now*.

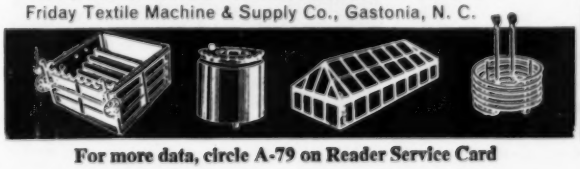
* U.S. Pat. Off. No. 2779104

Fabricators Since 1928

Sims METAL WORKS

WEST POINT, GA.

United States Supply Co., 888 Broadway, East Providence, R. I.
Harley D. Hohm, Inc., 128 Buist Ave., Greenville, S. C.
Friday Textile Machine & Supply Co., Gastonia, N. C.



For more data, circle A-79 on Reader Service Card

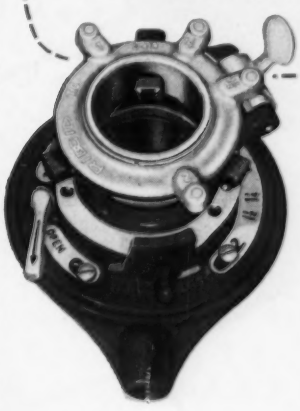
With these 3 RIDGID®

Jam-Proof Pipe Threaders

my power drive threading is Safe...

...no watching to keep them from jamming

...save me a lot of time, too!



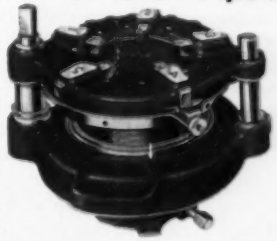
1" to 2" Pipe RIDGID 65R-TC

Jam-proof—can't jam if you forget it . . . Threads 4 sizes of pipe and conduit with 1 set of dies . . . True-Centering workholder—no more crooked threads—but adjustable for drip threads. Far more for your money—compare!

2½" to 4" Pipe RIDGID 4PJ

Jam-proof . . . drive pinion kicks out automatically—real safety when power threading. Workholder sets to size before putting on pipe. Other exclusive advantages. Special 4PJ for conduit.

4" to 6" Pipe . . . RIDGID 161



Jam-proof for safe power threading. 1 set of dies threads 4", 4½", 5" and 6" pipe and conduit—sets to size fast. Workholder sets to size before putting on pipe, a work-saver feature. Many other reasons why the 161 is your best buy!

See and try these popular RIDGID Threaders . . . at your Supply House.

The Ridge Tool Company — Elyria, Ohio, U.S.A.

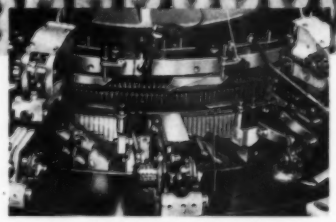
THREADED PIPE . . . *It's Tight . . . It's Best . . . Costs Less!*

For more data, circle A-80 on Reader Service Card

This NEW SUPREME Model BRW Puts YOU On Top Of The *BULKY KNIT* WORLD

- **Gives you *unprecedented* bulky knit variety and flexibility at *5 to 20 times* the output of any other machine.**
- **Knits 1 x 1 Rib and Half Cardigan bulky sweater and outerwear strips . . . in an infinite variety of colors and structures in Solids, Automatic Variable Stripes, Patterns, Textures and Combinations . . . maximum production rate of 1 strip per minute—100 yards per hour.**
- Produces body and sleeve strips with attached trims and *easy, clean-selvage draw thread separations.*
- Single operation . . . Independent tight and loose controls give desired structure and elasticity on body as well as cuff or waist.
- Standard 30″ diameter machine has from 3 to 6 cut cylinders and dials—16 feeds with 4 color striping boxes on alternate feeds—(Each of the 8 boxes is individually and automatically controlled for maximum selection without production loss)—Pattern wheels on all 16 cylinder feeds—Automatic tuck controls on all 16 cylinder and dial feeds permits automatic switch from half cardigan to 1 x 1 cuff stitch.
- Handles up to 3 ends of 2/18 w.c. yarn. Has revolving yarn stand *with stationary, rubber-covered take-up.*

***For a look at the BRW in action—* contact Supreme today or Morris Kaplan Co., Exclusive Sales Agent, 932 Madison Street, Brooklyn, N. Y.**



Knitting elements system in Supreme's new Model BRW

KNITTING ARTS EXHIBITION

KNITTING MACHINE CO., INC.
98-02 104th STREET, OZONE PARK 16, N. Y.
Southern Representative and Showroom
The Matlock Co., 914 East 4th Street, Charlotte, N. C.

88-192

NEW LITERATURE

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

Drafting system—Leaflet describes antifriction drafting system with a molded Nyprolon cradle that produces cleaner, stronger, and more-uniform yarn. Progressive Engineering, Inc. (F-1)

Extractors and dryers — Machines with completely closed drying systems that require no outside oil or filters described in bulletin from Gaston County Dyeing Machine Co. (F-2)

Finishing equipment—Two bulletins cover washers, soapers, boil-off machines, slashers, kettles, tanks, and the Bond machine for pile fabrics from Textile Shops. (F-3)

Magnetic flow meter—Booklet tells how flow meter was developed to measure the volume rate of "difficult or impossible" fluid such as cellulose, pulp, sewage, and slurries of all kinds. Foxboro Co. (F-4)

Psychrometer—That checks the moisture content of the entire processing run with an internally contained recorder is the subject of a bulletin from Hunter Controls, Inc. (F-5)

Automatic floor sweeper—Attached to push trucks picks up over 30 lbs. of lint a day. Described in leaflet from Excel, Inc. (F-6)

Portable evenness tester—For carding, drawing, roving, and spinning that checks the uniformity of work in process so that faults can be corrected at the source is the subject of a bulletin from Universal Winding Co. (F-7)

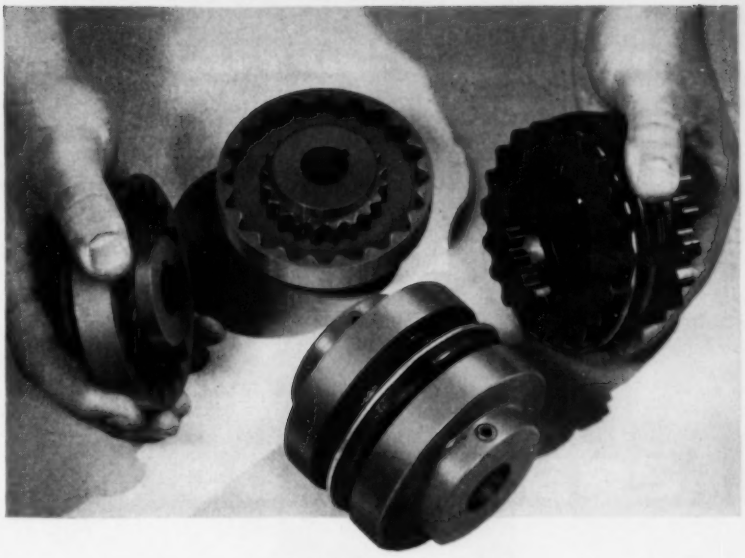
Selvage trimmer—With two vertical shearing heads, a two-way photoelectric sensing device, and individual exhausts is described in bulletin from Curtis & Marble Machine Co. (F-8)

Micro-fog lubrication—That cuts out grease dripping from drying cylinders is covered in folder from Norgren Co. (F-9)

Yarn-stretch recorder—That gives a continuous record of the stretch applied to yarn as it passes through a slasher is described in leaflet from Foxboro Co. (F-10)

Cloth control—Three bulletins on web tension controls and floating roll guide are offered by Mount Hope Machinery Co. (F-11)

Cleaning and air conditioning—Several different booklets that cover air conditioning, air changing, humidification, frame and room cleaning, and vacuum systems for spinning are



"Sure-Flex" Coupling's unique design, 4-way flex are . . .

. . . A "SURE CURE" FOR SHOCK, VIBRATION, SHAFT MISALIGNMENT

Unique design and 4-way flexing action enable Wood's "Sure-Flex" Couplings not only to absorb all types and combinations of angular and parallel misalignment and end-float . . . but from 5 to 15 times more shock and vibration than other leading flexible couplings. There are only four basic parts which lock together without clamps or screws, tightening securely under torque to provide smooth, dependable power transmission. There is no metal-to-metal contact, no wear, no need for lubrication or maintenance. "Sure-Flex" Couplings are easily installed, unaffected by abrasives, dirt or moisture. Operation is noiseless. Get all of the facts.

WRITE FOR BULLETIN 10100A.

V-BELT DRIVES • VARIABLE SPEED DRIVES • TIMING BELT DRIVES • CARD DRIVES • FLEXIBLE AND RIGID COUPLINGS • FLYWHEELS • PULLEYS • MOTOR BASES • BALL BEARING PILLOW BLOCKS, FLANGE UNITS AND TAKE-UP BEARINGS • BABBITTED AND BRONZE BEARINGS • DUCTILE IRON PRODUCTS

Woods

T. B. WOOD'S SONS COMPANY
CHAMBERSBURG, PENNSYLVANIA

ATLANTA • CAMBRIDGE • CHICAGO • CLEVELAND • DALLAS • NEWARK

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Whatever you buy
IN TEXTILES "made in U.S.A."
gives quality you can trust

Stickers for your mail are offered at no charge.
Large quantities at cost as a public service.

We invite you
to put your
local **S-W** man
on the SPOT

He can **SPOT** *trouble and* **STOP** *wasted time for recovering rubber rolls if you will use the S-W Roll-Guard Plan.*

S-W INC.

Ask him to prove this in your mill, on your machinery, this month.

STOWE-WOODWARD, INC. Griffin, Georgia · Newton Upper Falls, Mass. · Neenah, Wisconsin

NEW LITERATURE Continued

available from Parks-Cramer Co. (F-12)

Size applicator—Designed especially for high-speed slashing with all types of dryers is described in folder from Ira L. Griffin & Sons. (F-13)

Card drive—A compact, easily installed individual unit that will provide years of low-maintenance operation is described in folder from Southern States Equipment Corp. (F14)

CHEMICALS & SUPPLIES

Fiber control — A solid-film type of lubricant designed especially to impart excellent spinning and fiber-control properties to natural and man-made fibers is the subject of a bulletin from George A. Goulston Co. (F-15)

Spindle oil—That prevents sludge from depositing in spindle bases, keeps spindle blades clean indefinitely, does not increase viscosity after extended service, and offers excellent load-carrying ability is described in bulletin from Gulf Refining Co. (F-16)

Methyl ethers of hydroquinone—Catalog discusses the physical and chemical properties, specifications, toxicity, and applications. Ansul Chemical Co. (F-17)

Coating agent—Brochure describing some of its nitrocellulose solutions and typical formulations particularly suited for manufacturers of textile and paper coaters is available from Cellofilm Industries, Inc. (F-18)

Chemical index—That lists all types of products you use or may want to use is offered by Celanese Corp. of America, Chemical Div. (F-19)

Rubber coating paint—That has an outstanding protective barrier against corrosive fumes, salt water and spray, weathering, impact, abrasion, and most chemicals is the subject of a pamphlet from Charleston Rubber Co. (F-20)

Soap and detergents—A buying guide that gives complete information on soap and synthetic detergents can be obtained from Colgate-Palmolive Co. (F-21)

Compressed picker stick—Made of resin-treated wood that is four to ten times more durable than normal hickory wood and two times more durable than laminated impregnated sticks is described in pamphlet from Texpak Plastics, Inc. (F-22)

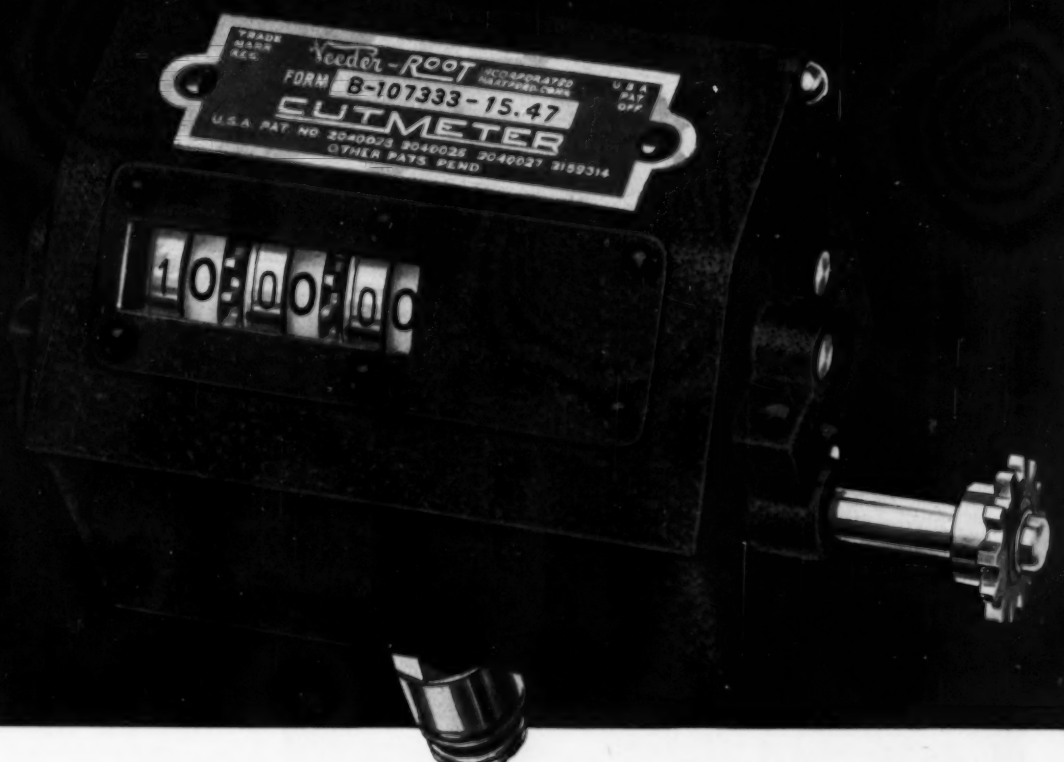
Lubrication—A line of machine lubricating oils that cover a broad viscosity range, are oxidation resistant and nongummy, eliminate bearing corrosion, offer excellent scourability, and have outstanding wetting properties are discussed in folder from Shell Oil Co. (F-23)

Carpet backings—Article in "Chemical Review" describes Chemigum and

← Circle A-83 on Reader Service Card

Police your Profits with

VEEDER-ROOT LOOM CUT METERS



Weavers can pre-set these counters to the exact cut-lengths required. Then they can concentrate entirely on quality and production, without any cut marks to watch for. And when the pre-set length is reached, the counter will knock off the loom or signal the weaver.

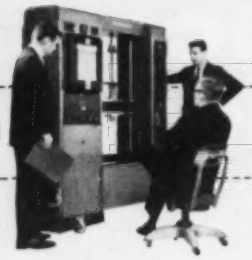
Cuts are automatically uniform in length . . . either single or double cuts. No shorts or longs. *No waste.* And this protection means new advantages in dyeing, finishing and converting. What's more, you have constant *Count*rol of inventory.

Most of all, your customers will be pleased with your new guarantee of uniformity. So have your local Veeder-Root representative show you how easily this "profit-policeman" can go to work in your mill . . . right now.

Veeder-Root
INCORPORATED
HARTFORD 2, CONNECTICUT GREENVILLE, SO. CAROLINA

"The Name that Counts"

INSTRON



a new dimension in precision fiber testing

Tensile Stress-Strain Properties of Fibers

A new, complete, authoritative 35-page report on the tensile stress-strain properties of eight different fibers, ranging from acetate to wool, is yours for the asking.

Tests, using an Instron, were made on these fibers in air at different temperatures and relative humidities, and in water at different temperatures. In addition, these fibers were studied at various rates of elongation.

Write for Bulletin T-1. It is one of many technical articles covering all fields of testing now ready for you in reprint form.

Discover how Instron's versatility can help you with your problem . . . let us know your field of interest.

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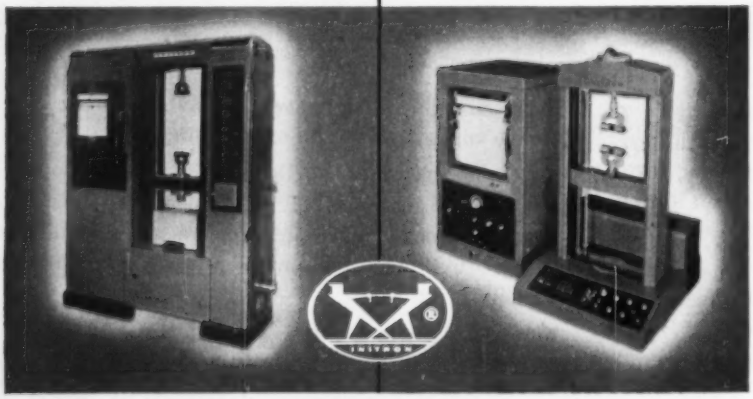
FLOOR MODEL INSTRON — *full scale load ranges: 2 grams to 10,000 pounds.*

TABLE MODEL INSTRON — *full scale load ranges: 2 grams to 200 pounds.*



NEW LITERATURE Continued

Pliovic latices used in rugs and carpets. Goodyear Tire & Rubber Co., Chemical Div. (F-24)

Sodium bisulfite—A guide that affords quick reference to uses of the chemical in the textile industry is available from Inorganic Chemicals Div., Monsanto Chemical Co. (F-25)

Acrylic-fiber processing — Bulletins contain operating data based on actual mill production and deal with the processing and weaving of Zefran. Dow Chemical Co. (F-26)

MAINTENANCE & ENGINEERING

Electronic controls—A brochure that describes and illustrates electric, electronic, and electronic automatic control systems for heating, ventilating, and air conditioning is offered by Barber-Colman Co. (F-27)

Industrial lighting—How industries have turned production problems into profits by better lighting is shown in a publication by General Electric Large Lamp Dept. (F-28)

Manual starters—An external lockoff arrangement is now a standard feature of Square D manual starters in general-purpose enclosures and makes it possible to lock the starter in the off position without removing the cover. Booklet from Reincke, Myer, & Finn, Inc. (F-29)

V-belt drives—A manual that tells how to select and install V-belts is available from B. F. Goodrich Industrial Products Co. (F-30)

Dust collector—A compact, wet inertial unit, 1/10 to 1/20 the size of any other collector, that collects over 99% of all dust particles 5 microns and larger, 92% of 2-micron dust, and substantial amounts of smaller dust is described in bulletin from Joy Mfg. Co. (F-31)

Adjustable-speed drive—All brushes, commutators, and slip rings have been eliminated from a drive in ratings from ¾ to 7½ hp. described in bulletin from Louis Allis Co. (F-32)

Limit switches—Two catalogs that give details of heavy-duty, snap-action, and mercury switches are available from Micro Switch Div., Minneapolis-Honeywell Regulator Co. (F-33)

Instrument training program—Bulletin listing the staff and describing the five major training courses offered by Bristol Co. (F-34)

Bearings, bushings, and machine parts—A reference guide for sintered metal parts that gives complete details about Wakefield alloys and their recommended usage is available from Wakefield Bearing Corp. (F-35)

Speed reducer—A shaft-mounted speed reducer in sizes up to 40 hp.

- **FLAT SIDEWALLS**
- **POSITIVE GRIP**
- **LONGER LIFE**

ORDINARY BELT CONDOR V-BELT

Note how Condor V-Belt at right prevents sag in the "power line".

1. ***All cords of the strength member pull equally . . . deliver maximum, uniform share of power!***
2. **Firm sidewall pressure avoids power waste . . . MORE GRIP, LESS SLIP.**

THE SMOOTHEST RUNNING V-BELTS MADE!

Because Condor V-Belts ride properly in the groove, they run smoother, cooler . . . even on the toughest drives.

The flat sidewalls of Condor V-Belts insure that the lower, compression area of the belt properly supports the load-carrying strength members on a straight line, to permit all the cords to contribute their full share of the pulling power. This prevents premature failure caused by tighter cords being overworked. It also exerts a firm side-grip on the groove to avoid belt slip and power waste.

"More Use per Dollar"

Write for Bulletin 6868

MORE GRIP . . . LESS SLIP

CONDOR V-BELTS REDUCE DRIVE COSTS

Condor V-Belt engineering makes the difference. R/M micro-positions belt strength members in special heat-dissipating rubber for a smoother, cooler running drive . . . and longer belt life under the heaviest drive loads. Condor V-Belt sidewalls are made *flat* to put positive pressure on sheave grooves for *more* grip, *less* slip . . . to assure maximum power delivery *without* costly power waste. Pre-stretching during manufacture removes any inelastic stretch that might otherwise occur. For users of longer length belts, C, D, & E cross sections are also vacuum-sealed in moisture-proof aluminum bags—*length certified* and fresh from factory to field! Specify Condor V-Belts . . . the smoothest running V-belts made for longer, trouble-free service and lower V-belt drive costs.

CONDOR ENDLESS BELTS—*On serpentine drives with short centers, small pulleys and reverse bends, Condor Whipcord Belts outlast as many as 10 ordinary flat belts. Exclusive Extensible-Tip cover splice and rubber rivets dissipate stress rounding pulleys . . . eliminate cover separation. Write for Bulletin 6869.*

RM-937

BELTS • HOSE • ROLL COVERINGS • TANK LININGS • INDUSTRIAL RUBBER SPECIALTIES

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

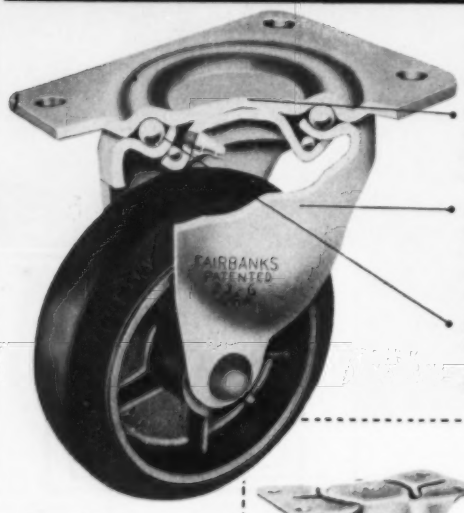
RAYBESTOS-MANHATTAN, INC.

Other R/M products: Abrasive and Diamond Wheels • Brake Blocks and Linings • Clutch Facings • Asbestos Textiles • Mechanical Packings • Engineered Plastics • Sintered Metal Products • Industrial Adhesives • Laundry Pads and Covers • Bowling Balls

ACHIEVEMENT IN CASTER DESIGN

FAIRBANKS

"LOCKWELD" Swivel Casters — Without King-Pin!



CHECK these unmatched advantages:

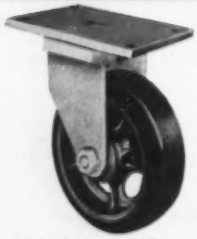
- No King-Pin. Patented "LOCKWELD" construction eliminates the major cause of caster failures.
- Patented leg design—spherical shape provides greater strength through better dispersion of shocks and overloads, easier swiveling under load.
- Larger raceways and ball bearings — perfectly aligned by the rigid welded structure — give faster, easier swiveling action.

Fairbanks Series "23" double ball race swivel casters, for medium duty, sizes 3" to 8".

Fairbanks Series "33" rigid casters, match Series "23" casters in height, sizes 3" to 8".

Fairbanks Series "21" single ball race swivel casters, for regular duty, sizes 2" to 6". Matching rigid Series "31" casters available.

HEAVY DUTY STEEL CASTERS



Fairbanks Series "27" double race swivel casters, for heavy duty, sizes 6", 8" and 10".

Fairbanks Series "37" rigid casters match the Series "27" casters in height, sizes 6", 8" and 10"

Fairbanks Series "500" Vulcanized Rubber Tired Wheels, roller bearing, sizes 3" to 18". Standard of the industry

YOURS ON REQUEST: Casters and wheels catalog complete with specifications and details. Write for your free copy today.

Order Fairbanks products through your local distributor who is always ready to serve you.

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NEW LITERATURE Continued

and with nominal internal-gear ratios of 5 to 1, 15 to 1, and 20 to 1 is announced in bulletin from Allis-Chalmers Mfg. Co. (F-36)

Centralized-lubrication system—With adjustable valves from zero delivery to 0.0032 cu. in. is described in reprint from **Textile World** and folder from Alemite Div., Stewart-Warner Corp. (F-37)

Temperature measurement—With rugged dependability, simplified adjustments, and excellent repeatability is discussed in bulletin from Taylor Instrument Cos. (F-38)

Metalworking handbook—A 256-p., pocket-size data book that includes aluminum analyses, characteristics, mechanical properties, and tolerances is offered by Joseph T. Ryerson & Son, Inc. (F-39)

V-belts—With higher strength and greater stability and stretch resistance are the subject of a pamphlet from Boston Woven Hose & Rubber Co. (F-40)

GENERAL

Shipping guide—Directory listing the principal cities and direct connecting carriers determined by whether shipping north or south or within some particular area is offered by Johnson Motor Lines, Inc. (F-41)

Materials handling—Booklet containing the principles of materials handling is available from Material Handling Institute, Inc., Educational Div. (F-42)

Waste treatment—A 32-p. bulletin describing a plastic packing material used in the biological oxidation of liquid wastes is offered by Plastics Merchandising Dept., Dow Chemical Co. (F-43)

Wire stitching—Questions and answers about wire stitching are listed in booklet from Acme Steel Co. (F-44)

BATTERYHAND JOBLOADS

CONTINUED FROM PAGE 60

60 (mins. in 1 hr.), and then the actual running time of the bobbin can be multiplied by the constant to obtain the batteries per job.

A Constant Can Be Used

For a standard workload of 500 bobbins per hour, the constant is 8.33. If a bobbin of the 10s filling runs 5.13 mins., the batteryhand jobload will be:

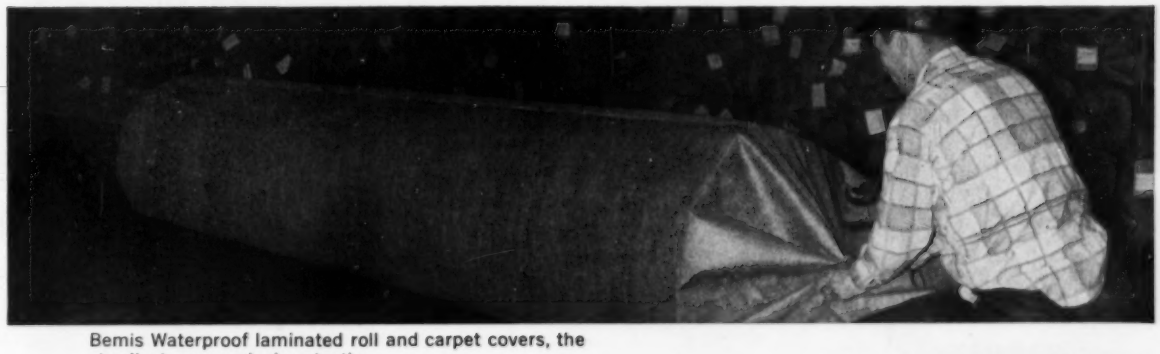
$$8.33 \times 5.13 = 42.7$$

The batteryhand jobload for this number of filling will be 43 batteries.

There are many instances when a

From Big Ones like these →

Bemis Tite-Fit Tubing—spiral-sewn burlap tubing with 2-way stretch; sturdy, economical, fast to use.



Bemis Waterproof laminated roll and carpet covers, the sturdiest, economical protection.

to small ones like this →

Bemis Plastic Packaging gives showcase display. Can be beautifully printed with your sales message.

Bemis is the Textile Industry's top source of packaging materials

WHATEVER YOUR NEEDS . . .

Waterproof bale and roll covers* and bale caps*—Sturdy paper covers* for textile rolls and carpets—Burlap Tite-Fit Tubing®*—Burlap piece goods—Flip-Close®* and other fast-selling polyethylene packages for soft goods—Soft-finish cotton threads and twines . . .

Bemis is your top, dependable source. Ask for the *full* story about the help Bemis can give you.

**Bemis* *developed* *these. It's natural we know how to make them better.*

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batteryhand has two or more numbers of filling on the job. One way to figure a full job is to use percentages. If the job has 23 batteries of one style where 40 batteries are a full job, the batteryhand has 57.5% of a full job on this style.

If for instance the adjoining looms have a style that has 60 batteries per job, the batteryhand will need 42.5% of 60, or 25 of these batteries, to fill out the job.

Another way to lay out mixed jobs is to have a constant for each unit. Each battery on a 40-battery job represents 2.5% of the job; so 2.5 is the constant for this filling. If there are 23 batteries of this particular style on a job, then 23 x 2.5 = 57.5% of a job; and enough units of one or more other styles can be added to make a full 100% job.

The Yards per Bobbin Vary

In most mills, there is a lot of variation in the number of yards per bobbin. This variation may be caused by the way the doffing cycle is laid out, by a difference in the build of the package, or by the density of the lay of the yarn.

Batteryhand jobloads can be laid out more precisely and fairly, and labor costs can be cut if each filling bobbin contains a uniform, predetermined number of yards of yarn.

POINTERS FOR SUPERVISORS

CONTINUED FROM PAGE 119

the needs of the rest of the department, is doing things in a worker way, not a manager way.

You Must Maintain Your Status

In his department or section, the supervisor is a power. He's cock of the roost, king of the castle. But in the larger kingdom of the whole company, he has bosses, superiors, people of greater power and larger authority. Between the status of his role as the superior in his own area and his role as a subordinate to higher management is a razor's edge. Many supervisors either overdo or underdo in this critical area.

Frank Craigston, for example, strides through his large shipping room with his head high, his chest out. He's in command and he knows it. All these people work for him. They do his bidding, follow his orders, bring him their problems. Frank's a big man.

But let Mr. Gordon or Mr. Frazier, Frank's bosses, come into the shipping room, and Frank wilts. He gets humble and weak and small looking. He acts like an obsequious underling.

After the bosses go, Frank's employees look at him with disgust. When he gets his shoulders and his chin back up again, the boys in the shipping room grin behind their hands and wink secretly at one another.

Frank's integrity as a supervisor is worth about as much as a dish of last week's spoon bread. Why? Simply the wide gap between what he *is* (or is supposed to be) and what he *does*.

What Can You Do About It?

Quite possibly all these difficulties can be avoided by supervisors at every level if a few obvious but not-so-simple steps are taken:

1. **Define your job.** Learn just what is expected of you as a supervisor, what functions you are supposed to fulfill, what responsibilities you have, and what authority you have. You may have to talk with your boss, perhaps several times, to clear up these points. Often the quickest and best

SEASONAL PEAKS

can be taken in stride when you enjoy the financial services of L. F. Dommerich. You can prepare for peaks well in advance, buy advantageously, produce without overtime, ship on favorable terms, all with cash provided under the Dommerich plan.

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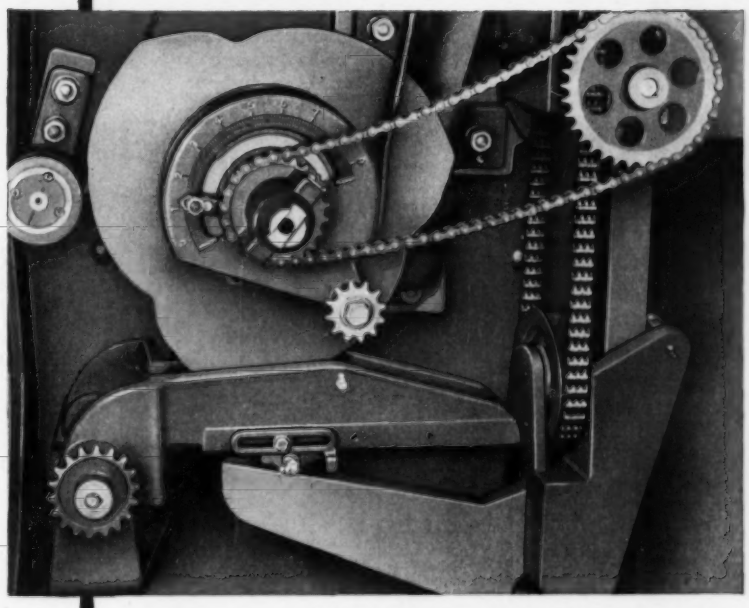
For more data, circle A-89 on Reader Service Card

Here's what you've been waiting for... a new cost-cutting CAM!



It's the New WHITIN

PIEDMONT-Type CAM

It's true—the new Piedmont-type Cam can reduce your spooling and winding costs even on conventional Spinning Frames.

This exciting new Cam design, researched and developed especially for Whitin's great new PIEDMONT Spinning Frame is *now available for installation on all Whitin Frames and other makes as well.*

Now, for the first time, you can build bobbins with filling wind which permit full utilization of today's high-speed winding and spooling machinery.

IMMEDIATE DELIVERY

The New Whitin Piedmont-Type Cam Provides:

1. Maximum winding and spooling speeds without sloughing.
2. Fewer ends down.
3. Lower spinning costs.
4. Lower winding and spooling costs.

Don't miss this opportunity to cash in on the first real Cam improvement in years.

PLACE YOUR ORDER TODAY!

WHITIN MACHINE WORKS

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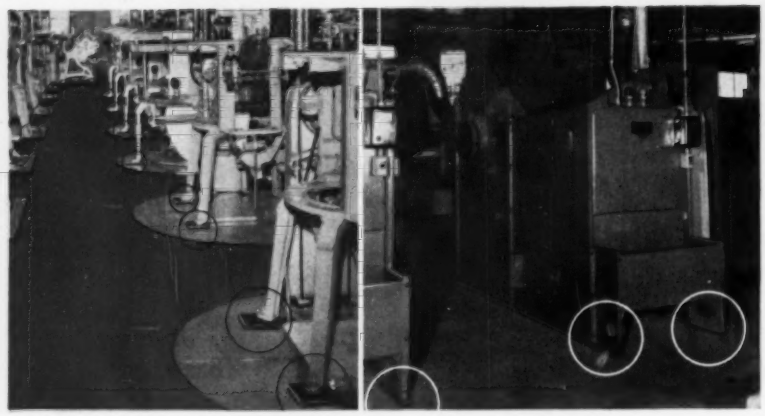
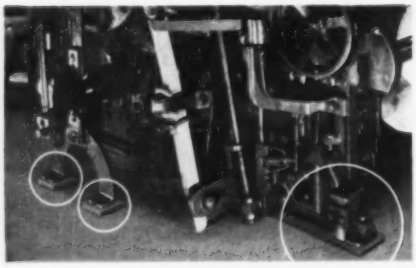
For more data, circle A-90 on Reader Service Card

Leading Textile Mills Report...

UNISORB Cuts Costs Reduces Noise and Vibration



Unisorb pads are used under all types of equipment to save installation time, eliminate lagging and bolting and reduce noise and vibration. Preparatory equipment, Circular Knitting Machines and Looms, as shown here, typify Unisorb installations. Unisorb is the only flexible mount available in variety of grades to suit "vibration personality" of each machine.



Unisorb pads save up to 75% in installation time — just apply cement to pad and set in place. **No danger of "walking"** and machines can be moved any time. Every mill can be made quieter and more efficient.

Make Sure All Your Machines Are On Unisorb! Send for Sample and Free Book — or contact your nearest Unisorb Distributor . . .

Industrial Supply Co., Clinton, S. C.
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Division of The FELTERS Company

Want more information? Send for set of Unisorb "Facts" Books!

Please send me a Unisorb Sample and Free Book.

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FEB-31

way to get a full understanding of everything a job entails is to write out a description of the job and then see what the boss thinks about your description and what changes he would make in it.

It may help to have discussions with other supervisors at your level and at different levels. All these contacts will aid considerably in the second step, too.

2. Identify Your Status. Discover where you stand in the power picture, the social structure, and the responsibility range. This is not "what" your responsibilities are but "how great" your responsibilities are in comparison with those other people have.

3. Act on These Bases. Once you know with some assurance what you are, or what anyone holding the position you hold is, then do those things appropriate to this identity and in the manner called for by this identity. When you have confidence that you are standing where you should be standing, you can deal with your subordinates and with your supervisors in the right way.

You will then have gone a long way toward establishing your integrity both as a supervisor and as a man.

KNITWEAR PRODUCTION

CONTINUED FROM PAGE 62

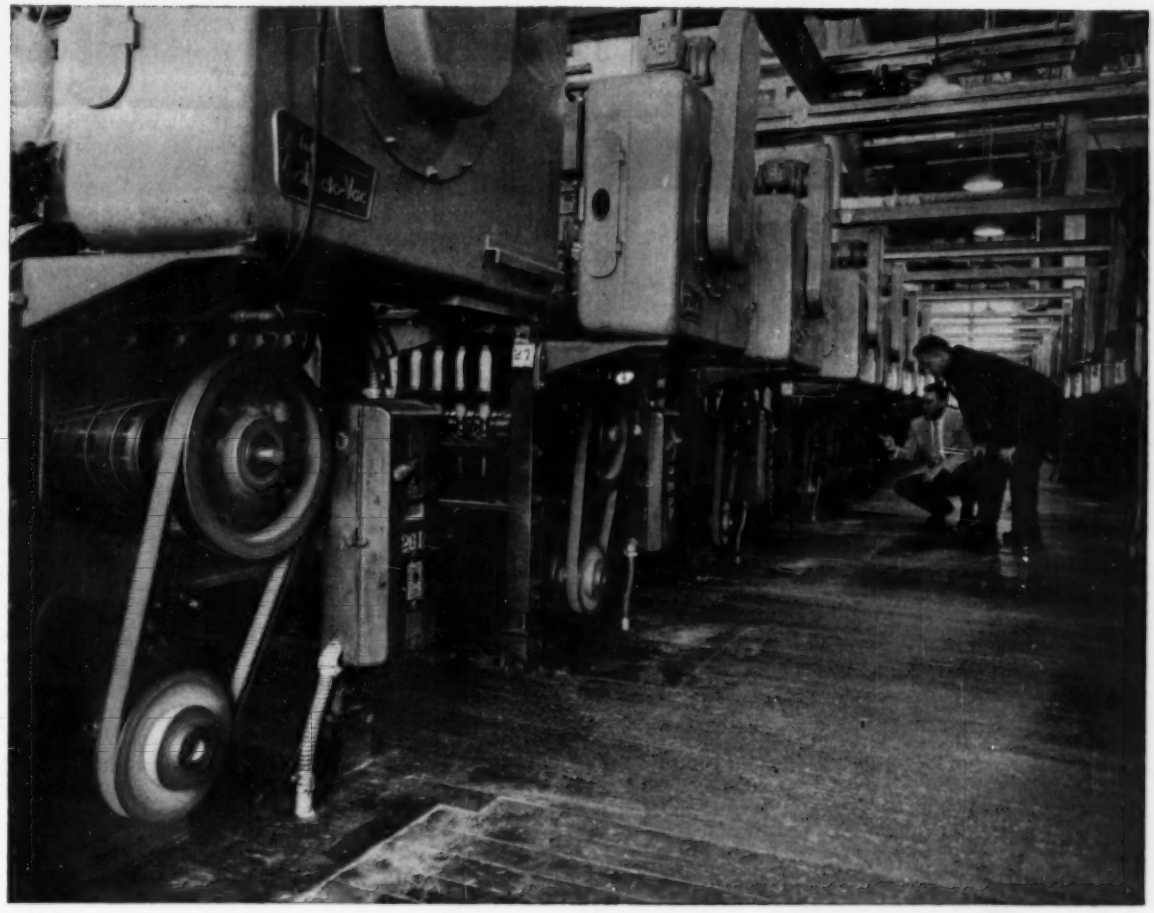
Cut goods are assembled in cartons for seaming and are carried down to the third floor, where carrier prongs hit a contact point and discharge the cartons on an inclined gravity conveyor, which ends at the start of the sewing operations.

Tilt tables are used between each sewing operation. Production of sweaters has been doubled with these tables, and the need for cartons or trucks behind the operators has been eliminated.

After pressing, the goods are placed on flat fibreboard pieces on gravity roller conveyors that pass them to a ball-bearing table where they are separated for various operations. The goods then travel by a gravity roller conveyor to a pickup point and onto the overhead conveyor that runs alongside the examining, folding, and boxing section and into the stock room.

The conveyor does not traverse the second-floor swimwear department, but goods from this department for stock or shipping are fed onto the conveyor at the point where it passes through the second floor to a contact point with the gravity roller conveyor

CONTINUED ON PAGE 160



Dayton Variable Speed Drives Help Boost Production at Spinning Mill

"Added convenience alone increased production in our spinning department by 2%," states the superintendent of southern textile mill that's being converted 100% to Dayton Variable Speed Drives.

"When we operated with overhead pulleys, it took several men up to three hours to change pitch on a series of frames. With our Dayton drives, one fixer, using only a wrench, can do as much work in half the time.

"Added safety is another important factor. With the complete drive at floor level, we no longer have to worry about the danger of having a man on a ladder working over heavy machinery that's running at high speed.

"When we're through converting, Dayton Variable Speed Drives will control the speed of all 25,000 spindles in our mill. Believe me, they really pay off both in time saved and in improved yarn quality. With our old system our yarn was never just right. Now, with Dayton Variable Speed Drives, we can adjust front roller speed to the last turn . . . hitting our yarn requirements right on the nose every time.

"Actually, our Dayton Drives are no trouble at all. They never need re-alignment and we've never experienced any problem with fretting corrosion with the Dayton sheave assembly. And, there's just no comparing the longer life and sure-gripping performance of Dayton Variable Speed V-Belts with any other belts."

Dayton Rubber

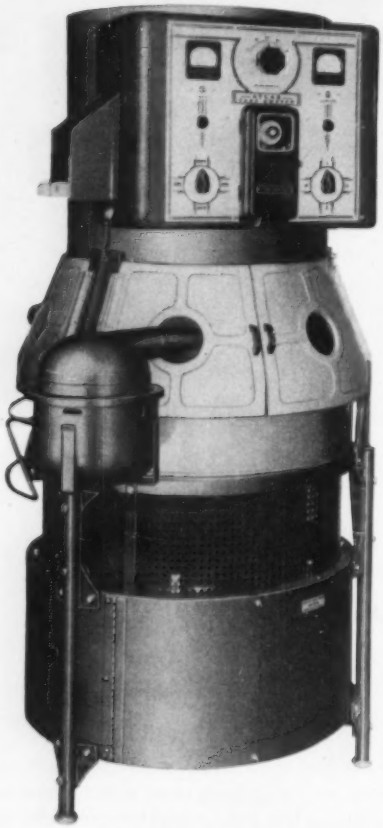
World's Largest Manufacturer of V-Belts

Consult the Yellow Pages of your telephone directory for the name of your nearest Dayton Distributor or write The Dayton Rubber Company, Industrial Replacement Division, Dayton 1, Ohio.

For more data, circle A-92 on Reader Service Card

the NEW Model FDA-RC

Fade-Ometer®



Exposure conditions can be varied to provide good correlation with either the Daylight or Sunlight exposure methods.

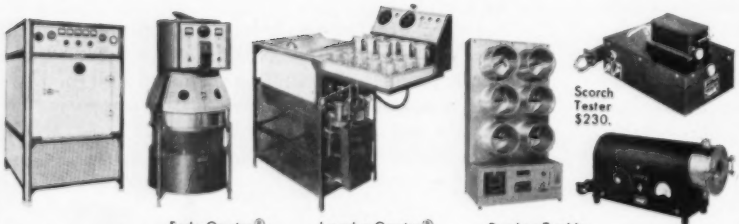
As the two natural light methods on moisture sensitive materials can produce wide variation in colorfastness ratings, it would be expected that two different exposure conditions in the Fade-Ometer would be necessary to duplicate them.

To simulate the day and night cycling of the Daylight method where the specimens are left in the cabinet 24 hours a day, new conditions of higher relative humidity during alternate periods of light and darkness are utilized in the Model FDA-RC.

The new Fade-Ometer may also be operated under the standard conditions for the FDA-R to duplicate the Sunlight method where the specimens are placed in the cabinet only between 9 and 3 on sunny days.

Added new features include an electrically operated atomizer, combination Cycle Meter and Time Switch, and modification of the electrical circuits to permit operation of the components during the light-off period.

All Model FDA-R Fade-Ometers now in use may be easily converted into the Model FDA-RC. *Write for full details on either a new machine or on conversion of present equipment.*



Weather-Ometer® $2755 up.

Fade-Ometer® $1350 up. Complete with supplies.

Launder-Ometer® $875 complete with accessories and supplies.

Random Tumble Pilling Tester $485 to $890.

Accelerator® $435.

ATLAS ELECTRIC DEVICES CO., 4114 N. Ravenswood Ave., Chicago 13, Illinois, U.S.A.

Sales representatives in principal cities throughout the world

KNITWEAR PRODUCTION

CONTINUED FROM PAGE 158

at the shipping section.

Union has also speeded the slow job of separating sweaters. Formerly, the separating threads joining each sweater had to be cut individually and pulled out by hand. Now a separating machine is used that allows an operator to separate up to 100 doz. sweaters per day.

Twelve transfer sweater bodies are separated at one time. The sweaters are folded at the separation point, and the ends of the threads are hooked over a hook on the machine. The operator then presses a foot pedal, and the drum moves clockwise to pull the threads evenly.

These time-saving ideas are helping Union Knitting Mills increase production without adding personnel.

CARD-SLIVER VARIATION

CONTINUED FROM PAGE 61

8. Bevel gears on the end of the doffer and on the side shaft were worn out. All of these gears along with the draft gear and the side-shaft bearings were replaced.

Variation Dropped to 8.9%

When the work was completed, sliver was tested on the Uster evenness tester. The results showed that variation had dropped from 18.3% to 8.9%.

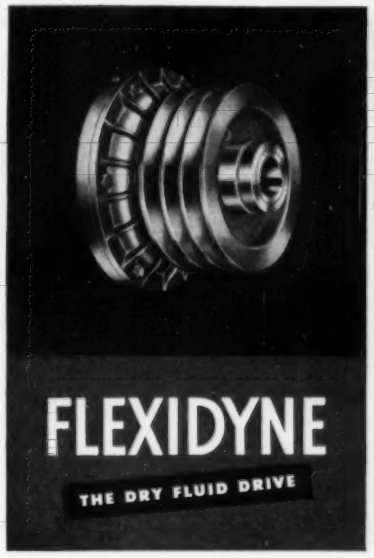
Another spectrogram was made as shown in Fig. 2, and all of the peaks except the one at 1½ yds. were eliminated. This peak was reduced to a point that indicated proper tension variation and control of fiber grouping.

The trouble shooter made his report and recommended that the other cards producing a high degree of sliver variation be checked completely for worn and loose parts, with especial emphasis on the areas where trouble showed up in card No. 48.

The recommendation was put into effect by the mill, and many other cards were found to have all kinds of worn and loose parts.

The management at once ordered a system of inspection and preventive maintenance set up in the card room. Fixers now are required to go over each card at regular intervals according to a special checklist, which they sign and turn in to the overseer.

Since the system was installed, maximum card-sliver variation has averaged less than 10%; and supervisors are again speaking to each other.



NEW DRIVE INSURES AMAZING SOFT STARTS FOR TEXTILE MACHINERY!

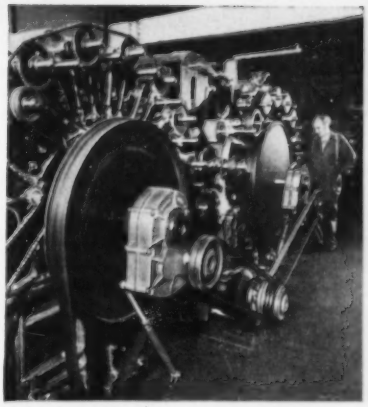
Flexidyne is an entirely new type of drive in which a dry flow charge of heat treated steel shot is employed to start loads *with fluid ease.* It accelerates quickly to full speed—and then operates *without slip at 100% efficiency.*

This revolutionary drive is being used with great success in:

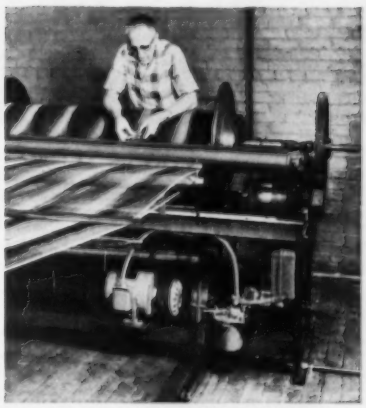
- cotton cards
- wool cards
- roving frames
- fly frames
- spinning frames
- slubbers
- openers
- tenter frames
- condensers
- extractors
- pickers
- beaters
- twisters
- warpers
- slashers
- cloth rolling heads
- cloth shearing machines
- and for synthetics, too

Ask your Dodge Transmissioneer for the full story. Or write us for Bulletin A-653.

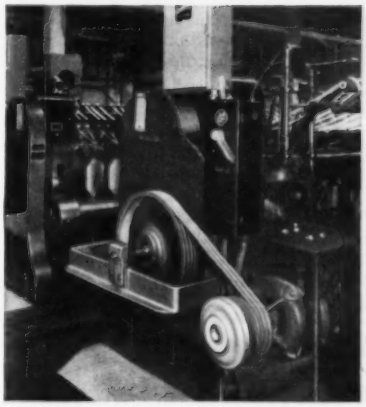
CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look in the *white* pages of your telephone directory for "Dodge Transmissioneer."



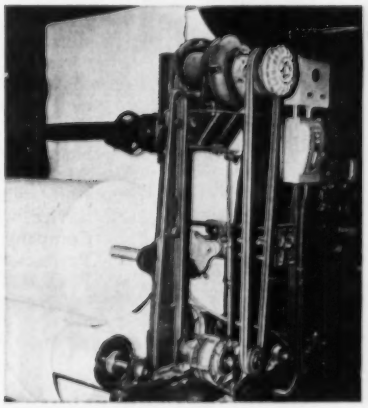
WOOL CARDS



LONG RAIL BEAM WARPERS



ROVING FRAMES

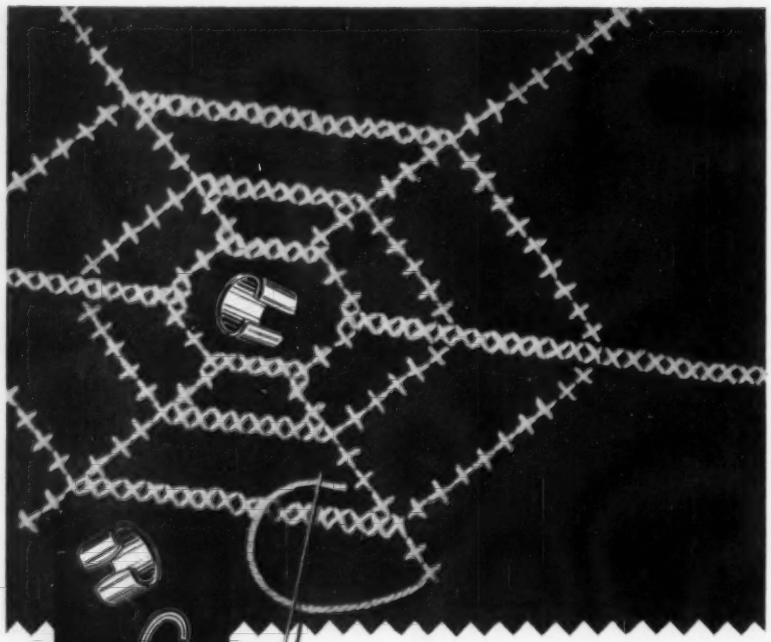


CORDUROY ROLLING HEADS

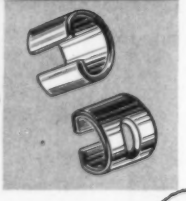
DODGE of Mishawaka, Ind.

DODGE MANUFACTURING CORPORATION, 1400 Union Street, Mishawaka, Indiana

For more data, circle A-94 on Reader Service Card



and twisting
spinning specialists!



Delicate spinning and twisting operations often call for special ring travelers designed to meet your exact requirements. And, nine times out of ten, National-Sterling Engineers have the prompt answer!

No one knows better what the right travelers can mean to modern spinning and twisting operations than the mill men who have called on National-Sterling Engineers for "right traveler" recommendations. In each case, they've found that smooth-running, precision balanced National-Sterling Ring Travelers consistently deliver more pounds of first class yarn at higher spindle speeds with fewer ends down.

Whether you're running cotton, wools, synthetics or blends, it will pay *you* to let an experienced National-Sterling Engineer "brush the cobwebs away" from your spinning and twisting problems. For prompt service, write, wire or phone National Ring Traveler Company and Sterling Division, 354 Pine Street, Pawtucket, R. I. Southern Office and Warehouse: P. O. Box 293, Gaffney, South Carolina.

NATIONAL
Sterling
RING TRAVELERS

F. L. CHASE, JR., *Pres. & Treas.* **L. E. TAYLOR,** *Southern Mgr.*

FOR SPINNING AND TWISTING ALL NATURAL AND SYNTHETIC FIBRES

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EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 146

Slide-Rule Fiber Analyzer

A circular slide-rule fiber analyzer for knitwear and other fabrics has been designed by Nicetown Dye Works Co., Orthodox & Belgrade Sts., Philadelphia, Pa., to help you select man-made and natural fibers that meet the particular needs of your customers best.

The analyzer shows such fiber factors as resistance to sun, heat, moths, wrinkling, and chemicals; and crease retention, moisture absorption, dye characteristics, etc.

Circle T-20 on Reader-Service Card

Yarn Guide

Addition of a quick-insertion, automatic-centering yarn guide to its heavy yarn and cord clamp is announced by Scott Testers, Inc., 95 Blackstone St., Providence, R. I.

The horn guide on the side-insertion clamp gives the operator extra speed in locating the yarn specimen at the exact center line of the pulling force.

The clamps are made in two sizes, for 75- and 400-lb. pull; and the locking cam is adjustable for various diameters of cords or yarns.

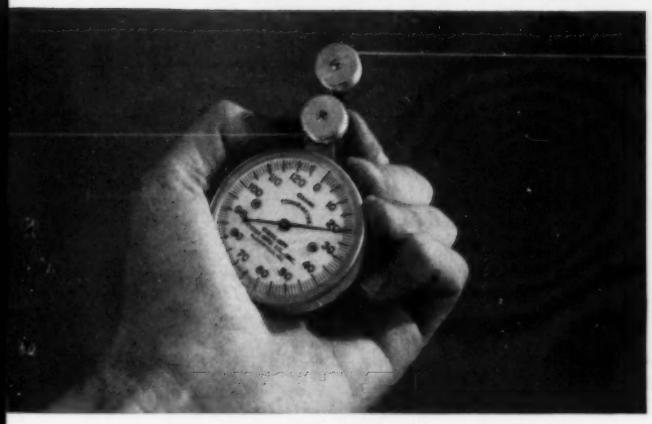
Circle T-21 on Reader-Service Card

Plug-in Limit Switch

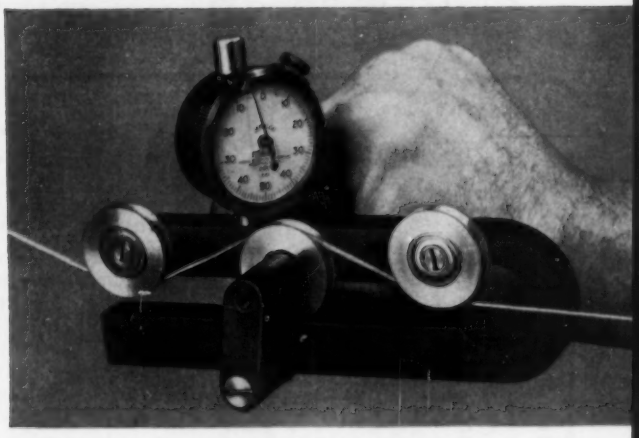
An oiltight, roller-plunger-operated, plug-in limit switch with great adjustment accuracy has been announced by Square D Co., 4041 N. Richards St., Milwaukee 12, Wis.

Micrometer adjustment permits up to ¼-in. movement of roller position after the switch has been installed. As a result, you can make accurate adjustments without moving the switch itself. The knurled adjusting knob can be marked to assure exact

4 ways to Faultless Fabrics

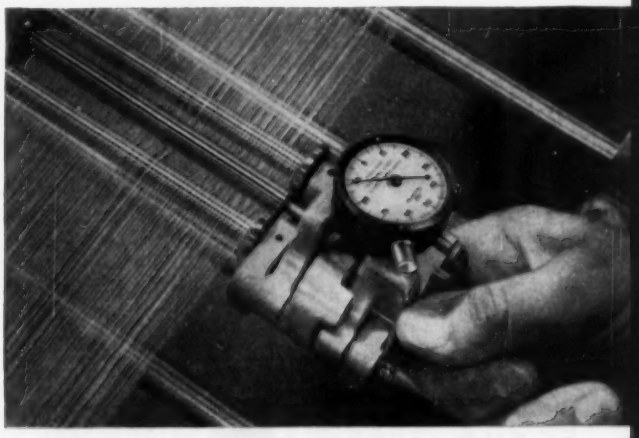


THE KIDDE-SIPP STANDARD TENSOMETER has a dampening device that gives steady readings without fluctuations. This pocket-size Tensometer is made in three ranges: up to 25 grams for fine denier yarns, 125 grams for most applications, or 250 grams for heavy yarns.



THE KIDDE-SIPP HEAVY DUTY TENSOMETER is available with tension ranges of 10, 20, 30, 50 and 100 pounds. It permits the quick, accurate measurement of tensions in a strand of thread, yarn, cord or wire. It is durable, and retains its accuracy.

THE KIDDE-SIPP DENSIMETER insures equal density on packages, prevents "sloughing off" on cops and quills. It may also be used with a Tensometer to assure packages of uniform density. Operation is extremely simple, and the dial is clear and easy to read.



THE KIDDE-SIPP SLASHER TENSOMETER permits the operator to check for equal tensions in all yarn sheets, no matter how many creel beams are used. Tensions can be compared, and beam let-offs adjusted to even out differences.

Kidde-Sipp Tensometers

Here's how you can get rid of costly seconds and rejects due to faulty tension: Use a Kidde-Sipp Tensometer. One of these tension-measuring instruments is ideal for setting and maintaining proper tensions for every operation.

For prices and complete information, write to:

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
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Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

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FABRIONICS WARP YARN MONITOR

- AUTOMATICALLY DETECTS DEFECTS IN YARN DURING WARPING
- ELECTRICALLY COUNTS DEFECTS ABOVE PRE-SELECTED SIZE
- FOR COTTON — WOOL — AND SYNTHETIC YARNS
- STOPS WARPER FOR REMOVAL OF OBJECTIONAL DEFECTS
- FAIL-SAFE CONTROL INSURES CONSTANT SENSITIVITY
- DETECTS DEFECTS AS SMALL AS A SINGLE BROKEN FILAMENT

Fabrionics

The Fabrionics Warp Yarn Monitor is an electronically controlled monitoring device which automatically detects imperfections in yarn above a pre-selected magnitude, simultaneously counts them and stops the warper to permit their removal. The Liner Discriminator model detects and differentiates *length* as well as *diameter* defects.

The Warp Yarn Monitor is placed to the rear of a warper at which point the yarn is condensed into a flat sheet and it is drawn over alsimag or hard chrome plated steel rods and photo-electrically inspected.

NOTE: Free literature and complete catalog on quality control instruments and devices are offered by the Fabrionics Corporation. Write to the FABRIONICS CORPORATION, P.O. Box 521, Dept. H, Huntington, L. I., New York.
Patent Pending

Circle A-97 on Reader Service Card

repositioning if the switch setting is changed.

Roller-operating direction can be changed 90° to allow for a cam approach perpendicular to the base of the limit switch. Because the limit switch can be mounted in any of six arrangements, all machine mounting requirements can be met easily.

Circle T-22 on Reader-Service Card

Drawing-Frame Clearer

A suction clearer for drawing frames and other machines delivering stock through a trumpet has been patented by Thomas J. Comber, 3314 Broadway N. E., Knoxville, Tenn.

The attachment consists of a suction conduit mounted on the top surface of the cover. A slot in front of each trumpet draws air over the front rim of the trumpet and removes lint from the front area of the frame. Offset nozzles extend rearward beyond the trumpet rim and clean lint from the sides and rear surfaces of the cover.

The suction action is periodic and puts little demand on the vacuum producer, which can also serve condensers, card strippers, etc. Lint is piped to a bin or collector at any convenient location.

Circle T-23 on Reader-Service Card

Oscillographs

Two models of direct-recording oscillographs that provide higher-recording frequencies have been developed by Minneapolis-Honeywell Regulator Co., Industrial Products Group, 5200 E. Evans Ave., Denver 22, Colo.

A timing unit provides short, accurately spaced pulses to timing galvanometers of 0.01, 0.1, or 1.0 sec. Pulse characteristics are such that with the timing signal applied to two 3,330-cycle natural-frequency galvanometers, full-width-time line will result.

Circle T-24 on Reader-Service Card

Whiteness Reflectometer

An instrument that measures whiteness, reflectance, yellowness, and opacity of white and near-white textiles has been developed by Hunter Associates Laboratory, Inc., 5421 Brier Ridge Rd., McLean, Va.

Principal uses are the measurement of progress in bleaching by both chemical and optical means. The instru-

VISQUEEN TRADEMARK
FILM
Gives You
BODY

"AUTOMATIC PACKAGING was made possible and more economical for 'Stayon' fitted crib sheets due in large part to VISQUEEN 'Q' film's superior stiffness and body. Production was speeded. Downtime eliminated. More efficient output per man hour achieved. VISQUEEN 'Q' film's greater uniformity of thickness made a stronger package—and cut breakage loss. Packaging end costs were cut considerably by VISQUEEN 'Q' film's superior quality. Crystal Tube of Chicago fabricates and prints our packages of VISQUEEN film."

Marvin Coburn
Stayon Products Inc.
Easley, S. C.

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Circle A-98 on Reader Service Card

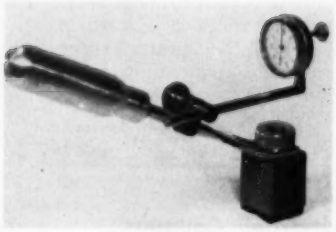
ment will separate and measure the contribution to whiteness of optical bleaches. The color quality of raw cotton and wool is also easily determined by the instrument.

Optional equipment includes an ultraviolet-light-absorbing filter that may be alternated between the incident and viewing light beams to measure directly the effect of fluorescent whiteness on speciment whiteness.

The instrument is built in two sections. On one side are the light source, phototubes, and a 2¼-in. specimen-viewing area. On the right side are the measuring circuit, vacuum-tube galvanometer, and digital dial. The sections can be separated by a connecting cable if desired, and an attachment is available that reduces the specimen area to ⅜ in.

Circle T-25 on Reader-Service Card

Roll Tester



An instrument for checking the run-out or eccentricity of both top and bottom spinning and roving rolls has been introduced by Custom Scientific Instruments, Inc., Kearny, N. J.

A magnetic base holds the unit in position so that the dial indicator button rests at approximately the center of the roll and normal to the surface of the roll. As the frame runs, the fluctuation of the dial indicator shows the run-out, which is twice the eccentricity.

Circle T-26 on Reader-Service Card

Spindle Brake

A spindle brake that permits stoppage of one or more spindles of a four-spindle tape drive has been announced by Kenbrake Corp., Patterson & 2nd Sts., Perth Amboy, N. J.

The brake consists of a revolving disk on which a free-running whorl and an automatic brake are mounted. A flick of the finger deflects the tape onto the whorl while the brake stops the spindle.

When one spindle is stopped, the other three continue to run at the

VISQUEEN FILM
TRADEMARK
BODY
Cuts Packaging Costs

FOR THE CONVERTER, VISQUEEN film's greater stiffness and body makes fabrication easier. Bags form easier. Film handles better on presses and wrapping equipment. Opens easier for faster filling. Sealing is quick, down-time eliminated. Production speeded.

FOR THE PACKAGE USER, VISQUEEN film's greater uniformity of thickness—with no weak spots—permits use of thinner, more economical gauges. This superior uniformity makes packages stronger. Breakage is minimized. Your product gets better protection in transit, storage and store. No aging or yellowing. You get longer shelf life.

Write now—or use the information request tag below for details.

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VISQUEEN *film— first and foremost polyethylene film. A product of the long experience and outstanding research of PLASTICS DIVISION*
VISKING COMPANY
6733 W. 65th St. Chicago 38, Illinois Division of UNION CARBIDE *Corporation*

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For more data, circle A-99 on Reader Service Card

Tennant-maintained floor in carding department of a large southern mill

Only the TENNANT System can keep your floors this clean

Chances are that your floors *can* look like this the year around . . . *if* you use the TENNANT SYSTEM.

And your maintenance costs will usually run less per year!

Floor seals last longer. Newly-developed TENNANT Floor Seals, specially designed for textile mills, last longer than any comparable materials we know of. This ends need for frequent recoating and reduces annual maintenance costs.

Makes floors easier to clean. The exclusive TENNANT process *actually increases dirt-resistance of the average textile mill floor by 300%*. Soilage wipes off easily . . . in a fraction of the usual time.

Keeps floors bright. The TENNANT SYSTEM's exclusive cleaning techniques make it easy to keep your floor attractive month-after-month . . . even under heavy traffic.

You'll also enjoy added benefits in improved safety and employee efficiency when your mill is a bright, pleasant place to work in.

Your TENNANT Man is a qualified floor expert, ready to give free estimate of savings possible in *your* mill. For full information, write G. H. Tennant Co., 737C N. Lilac Drive, Minneapolis 22, Minn.

TENNANT

The Textile Industry's Most Widely Used

FLOOR MAINTENANCE SYSTEM

Methods

Machines

Materials

FLOOR MAINTENANCE SYSTEMS

correct speed so that proper twist is maintained and streaky yarn is prevented if colored stock is being spun.

Tape wear is reduced. Excessive braking or the accidental leaving of a hand-operated cam brake in the "on" position is prevented. Wear on the inner tube and roller-bearing insert in the bolster is eliminated.

Circle T-27 on Reader-Service Card

Yarn-Filament Counter

The Manra yarn-filament counter developed by the British Rayon Research Assn. and built by Louis Newmark Ltd., Croydon, England, counts the number of filaments in a yarn.

Little skill is required to use the instrument. The yarn sample is clamped in the filament counter, and the operator presses a lever to start counting.

The yarn is strained and cut at a controlled rate while it is in contact with a crystal transducer that receives a signal as each filament is cut. Each impulse causes a voltage pulse to appear at the output terminals, and pulses are counted by an electronic counter.

Circle T-28 on Reader-Service Card

Electronic Counters

A line of electronic counters that will count anything presented to them in electrical-impulse form within their frequency range has been introduced by Instrument Div., Redford Corp., Lake Luzerne, N. Y.

The instruments handle inputs of 100 to 500 pulses per second and can count shaft or disk rotation, oscillatory motion, interruptions of infrared beams by objects greater than ¼ in. in diameter, and the edges of stacked material.

Operation is through solid-state and cold-cathode components that eliminate warm-up and heat dissipation. Other advantages include compactness, silent performance, low power requirements, and easy installation.

Circle T-29 on Reader-Service Card

Recorder for Yarn Tension

The Manra electronic unit developed by The British Rayon Research Assn. and made by Louis Newmark Ltd., Croydon, England, is designed for recording variations in yarn tension in conjunction with a capacitance-type yarn-tension transducer. The in-

JACOBS TIGER PAW

VIBRATION PADS

- Fiberglas & Vinyl — the Modern Way
- Reduces Vibration over 90%

The Bullard Clark Company

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JACOBS

NORTHERN Division Danielson, Conn.

- Vacuum Suction Cups Really Hold
- Not Affected by Oils, Greases, or Floor Finishes
- Made for any Size or Weight of Machine
- More Economical than any other type Vibration Pads
- In Stock — Prompt Delivery!
- No messy adhesives are necessary — just put proper size pads under machine and start up — if machine needs re-location, just pick up pads and re-use.

SAMPLES ON REQUEST

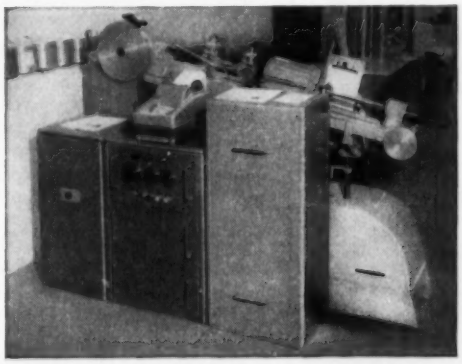
For more data, circle A-101 on Reader Service Card

FIRST U.S. SHOWING

Textile Research Institute Show
Hotel Commodore, N. Y., March 23, 24

"SCOTAMATIC"

UNATTENDED TIRE CORD TESTING AND RECORDING



TREMENDOUS SAVINGS

Shown here applied to the Scott Model IP-4 Incline-Plane Tester, the revolutionary "Scotamatic" operates completely unattended—once the operator has introduced a sample of yarn or cord, the machine takes over, testing and recording throughout an entire bobbin or group of samples, without any attention. Recording and evaluation of results are in three values: 1) stretch at a predetermined point of load, 2) ultimate tensile strength, 3) ultimate elongation, for each specimen. In addition to operation on Model IP-4 with capacity to 50 lbs. tensile, "Scotamatic" is later . . .

TO BE AVAILABLE ON OTHER SCOTT TESTERS*

LITERATURE AVAILABLE

Request "Scotamatic Bulletin"

*Trademark

SCOTT TESTERS, INC., 95 BLACKSTONE ST., PROVIDENCE, R. I.

For more data, circle A-102 on Reader Service Card

The original resin co-polymer that eliminates "Resin Decay" in all resins.

Poly Coupler®

Used in the Textile Finishing Field for many years to inhibit and control odor development, formaldehyde fume generation, or to reclaim resinated goods without stripping. Available in three chemical grades, specific for any type resin system.

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ANOTHER TEXTILE ADJUNCTS PRODUCT

The proven anti-resin deposit agent, that prevents resin build-up on finishing equipment. Reduces shut-downs for clean-ups by 50%.

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Furnished in aerosol or bulk.

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The ROTARY UNION Outlasts all other Rotating Joints

The Rotary Union's patented construction, with its optically flat mechanical seal, automatically adjusts to pressure ranges . . . eliminates mechanical maintenance and adjustments. Gives smooth sealing and unmatched service on all types of rotating heating or cooling equipment. Ball bearings reduce wear and power consumption.

A Precision Mechanical Seal

- Self-Aligning
- Self-Adjusting
- Pipe Sizes ¼" thru 3"

"WHERE *Good Connections* COUNT"®

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New York—Providence—Hamilton, Ont.—Montreal—Toronto

For more data, circle A-104 on Reader Service Card

strument can also be used as an indicator or recorder amplifier for equipment where small changes in capacity or differential capacity are required.

The unit consists of an oscillator that feeds into a bridge circuit where two arms are brought out to the transducer socket. The circuit is designed to give zero output when the capacities connected at each side of the socket are balanced. When the capacities are unbalanced, a signal appears across the bridge circuit and appears as a voltage suitable for displaying on an oscillograph.

Circle T-30 on Reader-Service Card

Adjustable-Speed Drive

A mechanically adjustable-speed drive with ranges of 8 to 1 that operates from a.c. power and is available in ratings from 1 to 20 hp. with output speeds of 1 to 10,000 rpm. has been announced by Louis Allis Co., 427 E. Stewart St., Milwaukee 1, Wis.

The basic components can be rearranged in the field to meet changing requirements; and construction permits vertical or horizontal mounting on floor, wall, or ceiling. Location of output shaft and motor can be made in any one of four positions; and the speed-changing mechanisms are available on the top, right, or left of the motor housing.

Modifications available include remote control, tachometer indicators, and special flanges. A synchronous induction-drive motor can be substituted for the regular squirrel-cage motor where more-accurate speed regulation is required.

Circle T-31 on Reader-Service Card

Electronic Motor Operator

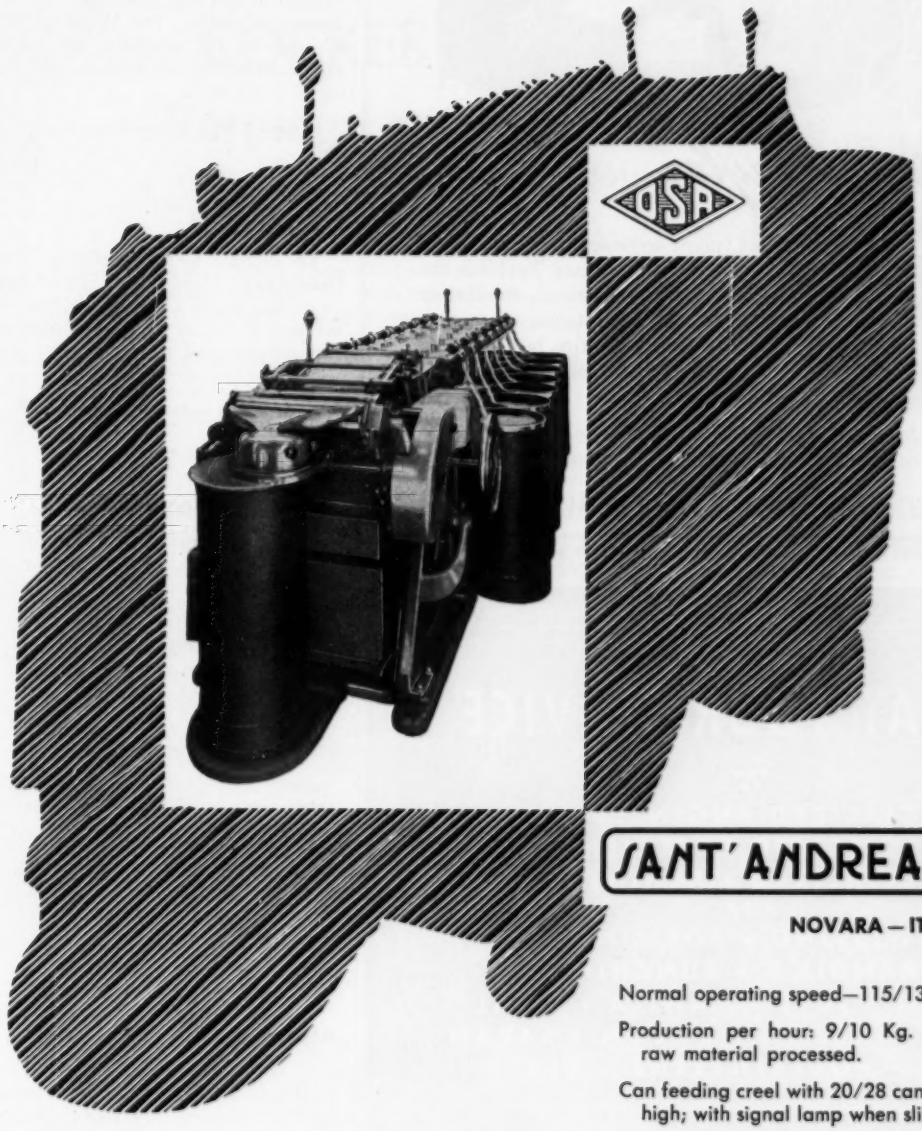
An electronic transistorized motor operator for fan-coil units, reheat coils, multizone dampers, and double-duct box-control applications has been announced by Barber-Colman Co., Rockford, Ill. The unit is compact and simple in design.

Electronic flexibility is possible by giving: (1) a choice of sensing elements and compensated control and (2) wide adjustment of range and ratio settings.

The operators are adaptable to year-around control of air conditioners or induction units supplied with hot or chilled water from a central source. Conversion from direct to reverse

HEAVY-DUTY RECTILINEAR COMBING MACHINE (Patented) Model PSL.

Greater production
Greater yield (less noils)
Better combing action and cleaner top.



SANT'ANDREA NOVARA

NOVARA — ITALY

Normal operating speed—115/130 nips per minute.

Production per hour: 9/10 Kg. approx., according to raw material processed.

Can feeding creel with 20/28 cans ϕ 400 mm. x 900 mm. high; with signal lamp when slivers break.

Nippers with special covering and adjustable safety device.

Automatic device (patented) to clear the top comb.

Delivery with special turning head, automatic stop motion and signal lamp when slivers break.

Delivery into 1 rotating can, ϕ 400 mm.

U.S.A. Representative:

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Ask the men who have the "say"

Halsey Taylor® gets their O.K.

Ask any architect, plant engineer or maintenance man . . . they'll all agree that Halsey Taylor is the logical choice. And not without reason, for Halsey Taylor offers the greatest advantages, since it is built by a house devoting its entire facilities and resources to the manufacture of the finest in drinking-water equipment.

Write for latest catalog

Illustrated— Halsey Taylor *explosion-proof* model for hazardous locations, subject to temperatures up to 110°.

The Halsey W. Taylor Co., Warren, Ohio

1D

For more data, circle A-106 on Reader Service Card

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SPECIALIZED ENGINEERING
SPECIALIZED EXPERIENCE
SPECIALIZED MACHINERY
FOR
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HASKELL-DAWES
MACHINE CO., INC.
2231 E. Ontario Street
Philadelphia 34, Pa.

For more data, circle A-107 on Reader Service Card

action is made with a simple switching operation done with either a hand switch or a thermostat.

Circle T-32 on Reader-Service Card

Nomograph

A nomograph devised by Automatic Transportation Co., Div. of Yale & Towne Mfg. Co., 149 W. 87th St., Chicago 20, Ill., simplifies right-angle aisle calculations required in specifying fork lift trucks.

Circle T-33 on Reader-Service Card

Display Rack

To display textile products, Plan Hold Corp., Dept. V/P, 5204 Chakemco St., South Gate, Calif., has developed a display rack that features easy removal and replacement of new styles or fresh samples.

Circle T-34 on Reader-Service Card

Hex Wrench

A hex wrench with an adjustable four-sided jaw that's easy to put on or take off is announced by Ridge Tool Co., Elyria, Ohio.

Circle T-35 on Reader-Service Card

Solenoid Valve

Two-way and three-way solenoid valves that permit greater flow, higher operating pressure, longer life, and ease of maintenance have been announced by C. A. Norgren Co., Englewood, Colo.

Circle T-36 on Reader-Service Card

Aftercooler

A machine providing compressed air that's dried, cooled, and cleaned for compressed-air instruments or controls is being manufactured by Niagara Blower Co., 405 Lexington Ave., New York, N. Y.

Circle T-37 on Reader-Service Card

Safety Flags

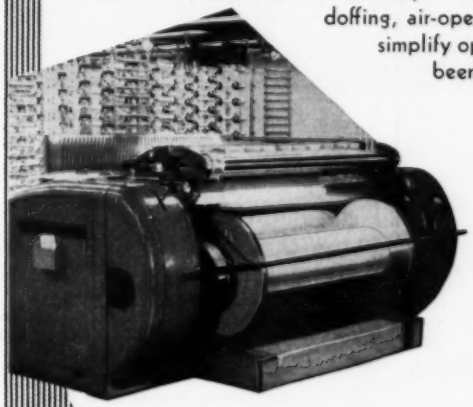
A safety flag of highly visible yellow plastic to provide positive visible in-

15 of the World's Leading Man Made Yarn Producers use COCKER Warping Equipment *Exclusively*

To be completely accurate: These mills have installed a total of 8 competitive warpers for comparative purposes . . . against a total of 205 Cocker Warpers.

Since 1950 Cocker has installed about three times as many warpers as the next leading make. Today most of the world's leading producers of man made fibers now use Cocker Warping Equipment Exclusively.

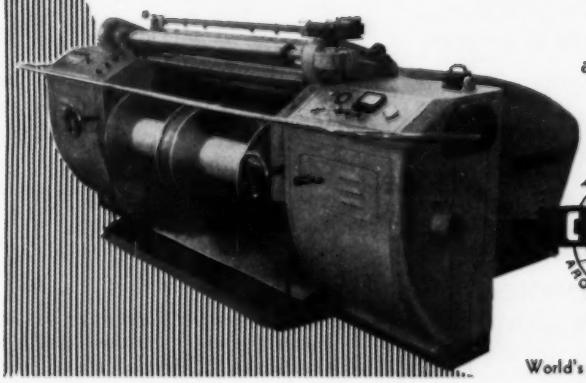
• **For Production.** Rugged construction and accurate controls permit maximum sustained speeds • **For Versatility.** Cocker Warpers are engineered with an eye to the future, with advanced features to meet the needs of tomorrow as well as today • **For Convenience.** Sensitive and accurate controls, indicators, air doffing, air-operated presser rolls, powerful brakes, and many other features greatly simplify operation • **For Economy.** For over 50 years Cocker equipment has been famous for its sound engineering, long service and low operating costs.



Whatever your warping requirements may be, there is a Cocker Machine which will do the job faster and better. Here are two examples:

The Cocker Model SD-49 Warper (left)

Designed especially for synthetics but will handle any type yarn. Produces unexcelled synthetic warps from finest deniers to heaviest tire cord yarns. Takes section beams with flanges up to 40" diameter. Produces warps of any desired density at speeds up to 1000 yds. per minute. Driven and braked from both ends.



The Cocker Multiple Beam Tricot Warper Model MB55-32 (below)

Will handle 2-21" beams, 1-42" beam, 1-50" or 1-55" Raschel Beam with simple changeover from one set-up to another. Individual controls are in full view and easy reach. Has all modern features and safety devices. Normal sustained speeds up to 600 yds. per minute.

Write for full information today.

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Montreal, Canada
Melrose 1-3571

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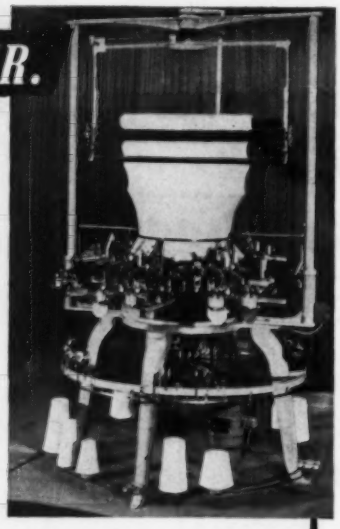
MACHINE & FOUNDRY CO.

Plant and Offices: Ranlo, N. C. Mailing Address: Gastonia, N. C.
World's Largest Designers and Builders of Complete Warp Preparatory Equipment

ALL NEW...
TOMPKINS S-1 JR.

MAKES THE MOST PERFECT CLOTH POSSIBLE



HERE'S A TYPICAL EXAMPLE...
Model S-1 Junior making fleece with 400-lbs. of Carter 26's and 8's —five feeds, 18" cylinder, running time 68-turns per minute . . .

- MINIMUM OF IMPERFECTIONS AND BROKEN NEEDLES

You can produce any class of cloth in the wide range of circular spring needle knitting—in greater quantity, with less waste and less needle breakage—on the New S-1 Junior! It gives you the proven Tompkins system in fully modern form . . . with triple stop motions, furnishing wheels, new gearless drive, automatic oiler and air cleaner! Get the full story now . . . be among the first to profit!

TOMPKINS BROS. CO.
623 ONEIDA ST. • SYRACUSE 4, N. Y.
Makers of Circular Spring and Latch Needle Knitting Machinery...Since 1846
For more data, circle A-109 on Reader Service Card

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The Southeast's Leading Sulfuric Acid Supplier

Our complete control of raw materials from mine to finished product allows our total independence from elemental sulfur and enables TENNESSEE CORPORATION to accommodate and ship large tonnages of acid quickly and with minimum notice.

The sulfur contained in the ore we process yields Virgin Sulfuric Acid of highest quality free from organic matter, very low in iron, and in no way contaminated from regenerated or spent sulfuric acid sources.

We produce all commercial grades and strengths of Sulfuric Acid from 60° Baume through the various Oleums.

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RELIABILITY
ABUNDANCE
RAPID SERVICE
TECHNICAL ASSISTANCE
VARIETY OF GRADES AND STRENGTHS

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Engineers
Since 1902

Textile Mills & Finishing Plants
Water Supply
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Surveys & Reports

GREENVILLE, SOUTH CAROLINA
Circle A-111 on Reader Service Card

dication of on or off blade position is used in pole units of safety switches and disconnects manufactured by Circuit Protective Devices Dept., General Electric Co., Plainville, Conn.

Circle T-38 on Reader-Service Card

Light Bulbs

Designed to offset the high cost of labor in relamping buildings, a light bulb for high-voltage service has been developed by Westinghouse Lamp Div., Westinghouse Electric Corp., Bloomfield, N. J.

Circle T-39 on Reader-Service Card

Rubber Insulation

A silicone rubber insulation system that seals moisture and contaminates out of electric motors is being offered by General Electric Co., Schenectady 5, N. Y.

Circle T-40 on Reader-Service Card

Ultrasonic Cleaner

An industrial-size high-power ultrasonic cleaning system capable of 1-min. high-speed precision cleaning of large assemblies or parts is announced by Narda Ultrasonics Corp., 625 Main St., Westbury, L. I., N. Y.

Circle T-41 on Reader-Service Card

Insulating Tape

A tape, with high-tensile strength and great elongation, that snugly hugs the surface on irregular contours is offered by Quaker Rubber Div., H. K. Porter Co., Inc., 300 Park Ave., New York 22, N. Y.

Circle T-42 on Reader-Service Card

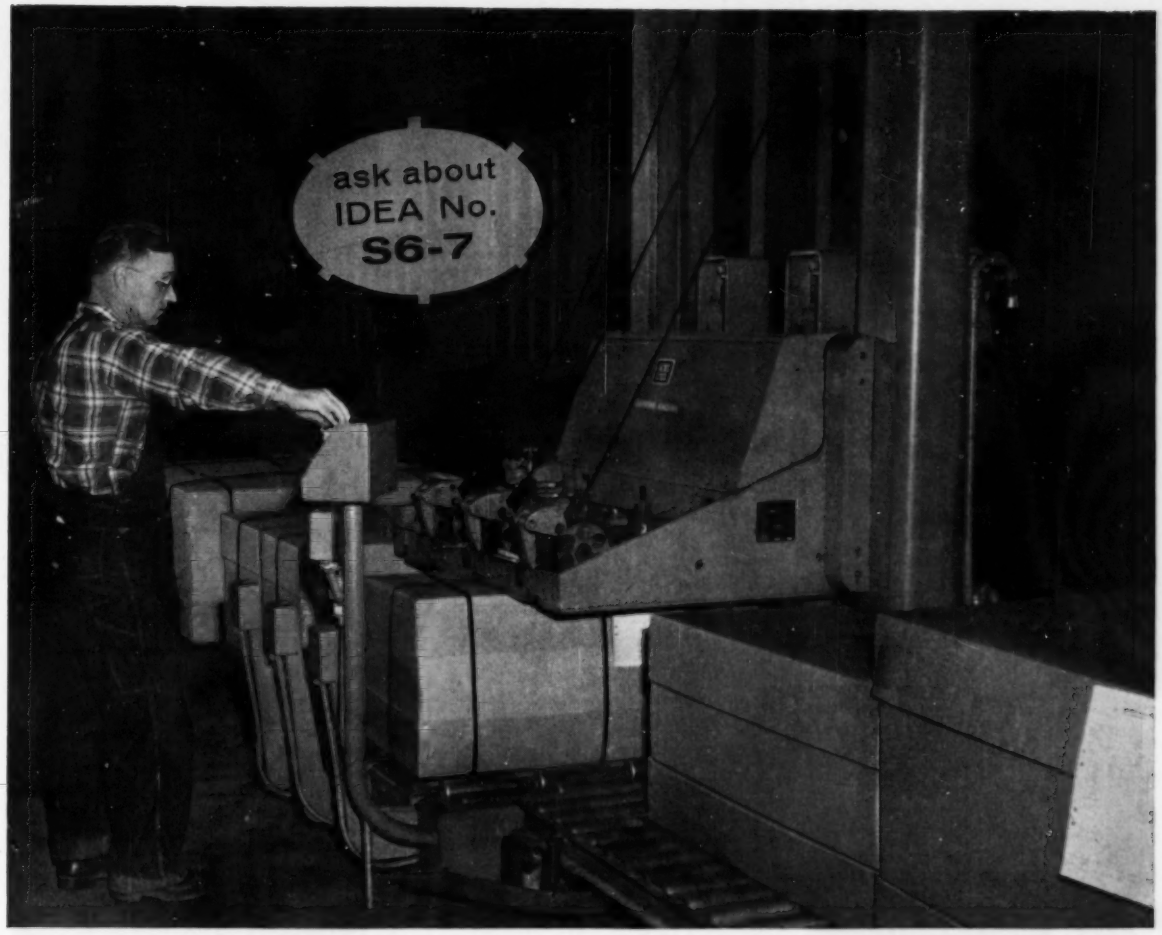
Pipe Dope

Development of pipe dope in roll form in 260- and 520-in. lengths is announced by Permacel, New Brunswick, N. J.

Circle T-43 on Reader-Service Card

Oiler

A precision lubricant-dispensing instrument in which the flow of oil can be increased or decreased by adjust-



Know your AIM*... Renfrew Bleachery Division does...

Strapping Machine compresses, straps textiles

Acme Idea Man J. B. Farr contributed to this modern packaging system.

RENFREW BLEACHERY DIVISION OF ABNEY MILLS, Travelers Rest, South Carolina, with the help of their Acme Idea Man, found a better way to compress and strap boxes of cotton cloth. Now an Acme Steel Model F3 Strapping Machine serves as the heart of a highly efficient packaging system. One man straps the entire production in far less time than formerly required. (Idea No. S6-7)

The F3 successively compresses the pack and tensions, cuts and seals one strap —or two or three straps simultaneously—while the pack is still under compression. Air powered and electrically controlled with push-buttons, it applies each strap with uniform pre-determined tension. After each application, the platen rises and the strapped pack moves down the conveyor. While the following pack moves into the machine, straps are feeding into position for the next application. Packs of varying sizes can be compressed and strapped in any sequence without machine adjustment.

***Know your Acme Idea Man.** Listed in the Yellow Pages under "Steel Strapping", he is well equipped to cooperate in solving your packaging and production problems. Call him today. Or write, Dept. TAS-39, Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois. In Canada, Acme Steel Company of Canada, Ltd., 743 Warden Ave., Toronto 13, Ontario.

ACME STEEL **STEEL STRAPPING**

For more data, circle A-112 on Reader Service Card

NOW! custom-made V-BELTS in any length with...

ALLIGATOR V-BELT FASTENERS

SIMPLE AS A, B, C!

When an endless belt breaks, merely cut off the required length of belt from a roll of Open End V-Belting, apply an Alligator V-Fastener and the machine is ready to "roll" again.

DESIGN NEW DRIVES WITH THIS IN MIND . . .

V-belts can now be made to any length . . . center distances are no problem . . . eliminate need for special length belts.

ONE STRONG JOINT

Permits fast and easy installation on all types of drives, particularly fixed center drives and drives with outboard bearings.

CUSTOM-MADE V-BELTS SOLD IN COMPLETE PACKAGE KITS — 5 SIZES!

ORDER FROM YOUR DISTRIBUTOR

SEND FOR NEW BULLETIN ON CUSTOM MADE V-BELTS V-227

Flexible STEEL LACING COMPANY

4707 LEXINGTON ST. • CHICAGO 44, ILL.

Circle A-113 on Reader Service Card

ing the cam is available from Plews Engineering Dept., 701 S. Seventh St., Minneapolis 15, Minn.

Circle T-44 on Reader-Service Card

Adhesives

Adhesives with greater shear strength at higher temperatures is introduced by Adhesives Dept., Raybestos-Manhattan, Inc., Bridgeport 2, Conn.

Circle T-45 on Reader-Service Card

Glass Frosting

A glass frosting in an aerosol can to reduce sun glare without color distortion is available from Crown Industrial Products Co., Dept. TWN, 1004 Amsterdam St., Woodstock, Ill.

Circle T-46 on Reader-Service Card

Gas-Valve Lubricant

A valve lubricant to meet exacting gas requirements is offered by Alpha-Molykote Corp., 65 Harvard Ave., Stamford, Conn.

Circle T-47 on Reader-Service Card

Connectors

A spraying-systems split-eyelet connector designed for liquid, gas, and air lines and for pressures up to 250 psi. is available from Spraying Systems Co., Bellwood, Ill.

Circle T-48 on Reader-Service Card

Finishing Paper

A finishing paper to sand and polish delicate loom parts and other textile machine parts is offered by Armour & Co., Coated Abrasives Div., Alliance, Ohio.

Circle T-49 on Reader-Service Card

Framing Angle

A framing angle with a precision-engineered recurring pattern of slots and holes to provide speed in assembly and maximum structural strength and

Automatically

CUT COST, CUT DEFECTS, BUILD QUALITY in Tricot Knitting

...with the Lindly Automatic Photo-Scanner

Set the amazing Photo-Scanner to detect your smallest allowable defect. Automatically, it does the rest...continuously scanning the tricot—**as it's knitted**—automatically stops the machine for larger faults.

You get top quality in finished goods—quality **you** determine—a measure of quality recognized throughout the industry.

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LINDLY & COMPANY, INC.
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MINEOLA, NEW YORK

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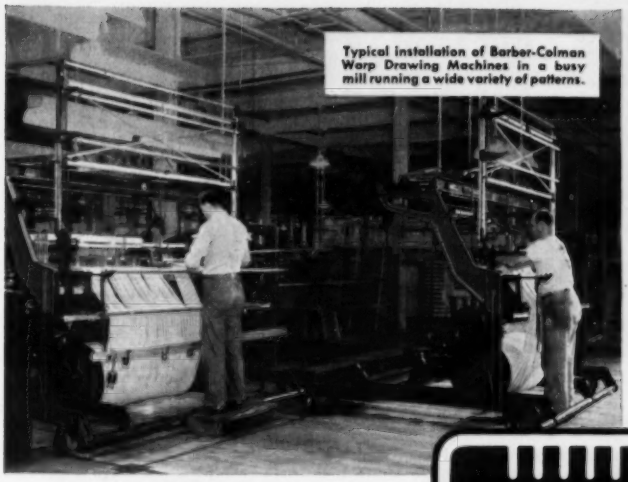


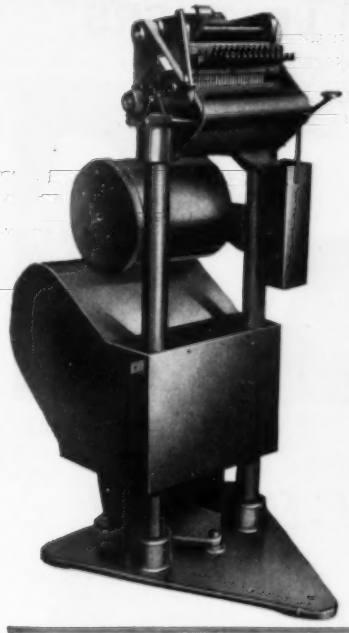
Typical installation of Barber-Colman Warp Drawing Machines in a busy mill running a wide variety of patterns.

THESE ACCESSORIES

GIVE GREATER EFFICIENCY IN OPERATING

WARP DRAWING MACHINES

BARBER COLMAN



POWER PATTERN PUNCH

The Power Pattern Punch is used to cut the sheet metal pattern which controls the selection of the correct heddle, drop wire, and reed dent, and the operation of the warp rods. This pattern chain is punched from the drawing-in draft prepared from the required weaving design. The machine, which is powered by a motor in the lower housing, is operated by setting keys for each line in the draft and then punching out each complete line by releasing one lever. It will punch paper, as well as metal, patterns.

HEDDLE COUNTER

This motor-operated unit will rapidly and accurately count off a selected number of heddles in a given frame, thus permitting excess heddles to be removed. It also checks the heddles to make sure that alternate key holes are correctly lined up. If it finds a heddle which is wrongly placed, the machine stops automatically, thus eliminating a possibility of mechanical damage to the heddles in the Warp Drawing Machine.

B-C MACHINES CAN USE PAPER PATTERNS

To answer a frequently-asked question: Barber-Colman Warp Drawing Machines CAN perform and HAVE performed their functions just as well with paper patterns as with metal patterns. However, due to lack of durability, paper patterns are recommended only for short runs.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

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INDIA	MEXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Industria e Comercio de Maquinas S. A. Ayemida Rio Branco No. 50, Rooms 1201/3 P.O. Box No. 63 Rio de Janeiro, Brazil	Do-Yei Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-machi, 3-chome, Higashi-ku, Osaka, Japan	Associated Agencies (Mcr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (Mcr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan

Ship fibers fabrics yarns

to principal
Textile Centers of the
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For "know-how" service on truck loads *or less*, call McLean today, or write Dept. A, Box 213, Winston-Salem, N.C.

McLean also manages and operates Hayes Freight Lines, Inc., serving the Central States

Circle A-116 on Reader Service Card

rigidity is being offered by Acme Steel Co., 135th St. & Perry Ave., Chicago 27, Ill.

Circle T-50 on Reader-Service Card

Condenser-Tube Protector

A fractureproof nylon condenser-tube protector that prevents turbulence is available from Crane Packing Co., Morton Grove, Ill.

Circle T-51 on Reader-Service Card

Nitrogen Generator

A compact liquid-nitrogen generator is announced by Instruments Div., Philips Electronics, Inc., 750 S. Fulton Ave., Mount Vernon, N. Y.

Circle T-52 on Reader-Service Card

Shelving

Boltless adjustable steel shelving is available from Penco Div., Alan Wood Steel Co., 200 Brower Ave., Oaks, Pa.

Circle T-53 on Reader-Service Card

Metal Insert

A one-piece all-metal self-locking insert with threaded or plain bore is offered by J. B. Plevyak Mfg. Co., 19 Jefferson St., Newton, N. J.

Circle T-54 on Reader-Service Card

Voltage Regulator

A regulator that is not affected by changes in load power and holds output voltage to within ±1% band width is available from General Electric Co., Schenectady 5, N. Y.

Circle T-55 on Reader-Service Card

Brushless Regulator

A voltage regulator without brushes is available from General Electric Co., Schenectady 5, N. Y.

Circle T-56 on Reader-Service Card

Conveyor Belt

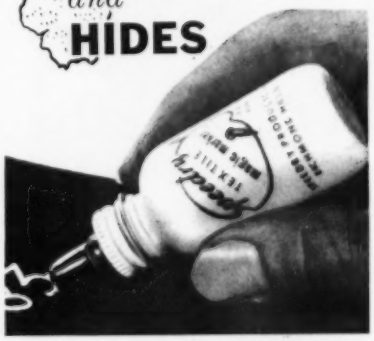
A nonstick Teflon-coated glass-fabric conveyor belt that solves the

NOW!

a Speedry
maqic marker®
patented

ESPECIALLY FOR

TEXTILES
FABRICS
LEATHERS
and
HIDES



Speedry Textile Magic Marker Model 83 with new Type "T" Ink.

and it has

EVERYTHING!

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- OPAQUE (white, yellow, red, black, green)
- FOR ALL FABRICS & COATED FIBRES
- FOR HIDES & LEATHERS—Raw & Processed
- LAUNDERPROOF
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- CONTROLLED FLOW FOR SMALL OR BOLD WRITING
- BALL NIB & VALVE ACTION
- UNBREAKABLE SQUEEZE BOTTLE
- EASIEST TO USE TO THE LAST DROP
- REFILLABLE — ECONOMICAL
- ALWAYS CLEAN—ALWAYS READY TO USE
- WILL NOT GUM OR CAKE
- NEVER STARVES OR CLOGS
- NO MESS — NO FUSS

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World's leading manufacturers of special purpose marking, stamping and stencilling inks and devices for industry.

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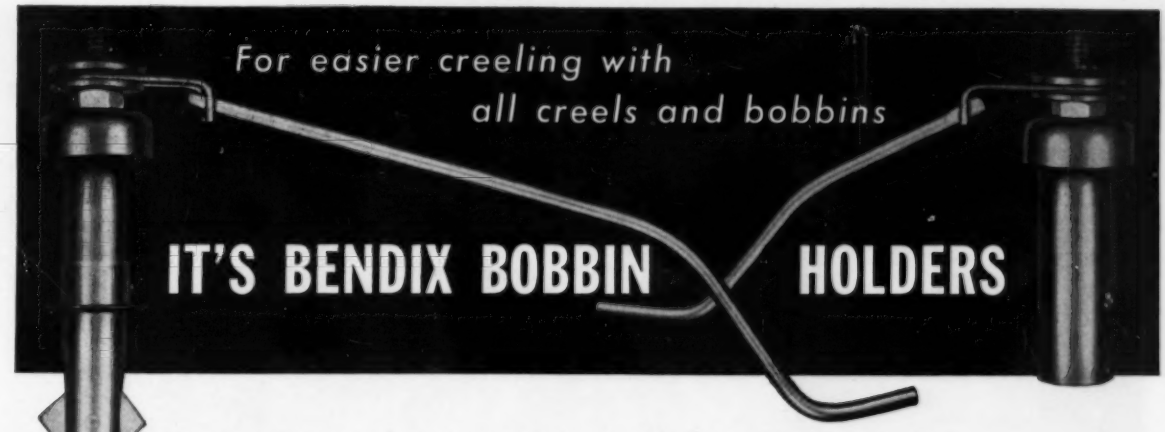

Bendix* Spin-Master Bobbin Holder (left) is the greatest advancement ever made in bobbin holder design. Adaptable to all types of creels and to practically all sizes of bobbins, the Spin-Master permits easy, one-hand creeling and has an exclusive nylon latch that eliminates bobbin wear. Easier creeling is also available with the spring type Eclipse Bobbin Holder (right), longtime favorite of the textile industry. Order the Bendix Bobbin Holder of your choice today.

Distributed in North Carolina and Virginia by Odell Mill Supply Co., Greensboro, N. C. Distributed in Alabama, Georgia, South Carolina and Tennessee by Greenville Textile Supply Co., Greenville, S. C. Export Sales: Bendix International, 205 East 42nd Street, New York 17, N. Y. ALSO FURNISHED AS ORIGINAL EQUIPMENT BY LEADING TEXTILE MACHINE MANUFACTURERS.

*REG. U. S. PAT. OFF.

ALL OTHER INQUIRIES TO:

Bendix-Elmira

Eclipse Machine Division, Elmira, New York

Bendix AVIATION CORPORATION

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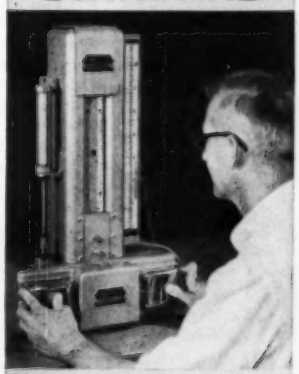
STANDARD



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All around the world, the Micronaire instrument and method of checking fiber fineness have been adopted as the standards by buyers, merchants, shippers, processors, mills, gins, warehouses, compresses, associations, exchanges, educational institutions—as well as governmental, institutional, association and commercial laboratories.

When you use the Micronaire, you can be sure that:

1. You are using the same Standard instrument that everyone else is using
2. You are using the easiest, lowest cost, most accurate instrument and the only one that gives a true, Direct Micronaire reading

For detailed information write to The Sheffield Corporation, Dayton 1, Ohio, U. S. A., Dept. 30

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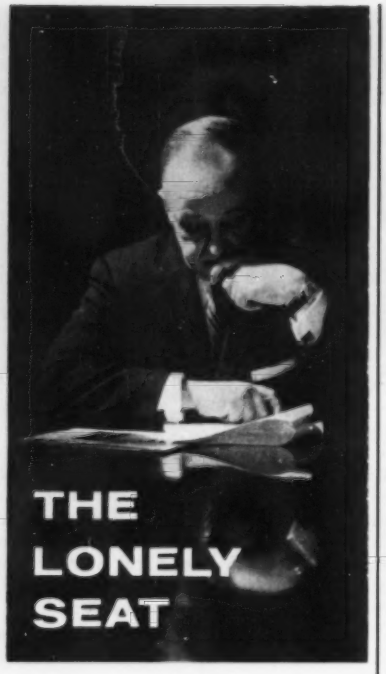

for buyers of Textile Machinery

Do we need new spinning? What are the best frames in the world for us? How many pounds more will be produced per shift? Can we handle these new fibres? What count? In what space? By what labor? At what RPM? By how many spindles? At what price each? How much will new spinning save us?

Armed with a quotation from Platt Bros. (Sales) Ltd. you are confident that you have all the facts to make an informed decision . . . A factory technician has surveyed your mill. An engineering group has analyzed your needs and made recommendations. The top management of the world's largest manufacturer of textile machinery has reviewed these proposals and stands behind them. You have a complete portfolio of facts. What does it cost to be so prepared? Nothing. When you are investigating new preparatory machinery, use Platt's regular service.

Manufacturer:
PLATT BROS. (SALES) LTD.
Oldham, England
Marketing the textile machinery of Platt Bros. & Co. Ltd., Howard & Bullough Ltd. & Dobson & Barlow Ltd.

Agents:
ATKINSON, HASERICK & CO. INC.
Framingham, Charlotte, Greenville, Philadelphia & Bradford, Eng.

Circle A-119 on Reader Service Card

problems of heat and sticking materials is offered by Quaker Rubber Div., H. K. Porter Co., Inc., Philadelphia 24, Pa.

Circle T-57 on Reader-Service Card

Stapler

A giant container stapler that closes 1,100-lb.-test triple-wall or double-wall boxes is being offered by Container Stapling Corp., 308 N. Park Ave., Herrin, Ill.

Circle T-58 on Reader-Service Card

Clutch-Brake

A miniature clutch-brake combination designed for applications that require minimum torque and miniature size is announced by Stearns Electric Corp., 120 N. Broadway, Milwaukee 2, Wis.

Circle T-59 on Reader-Service Card

Indicator

A 7-in. illuminated indicator for boilers that measures, transmits, and receives is announced by Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio.

Circle T-60 on Reader-Service Card

Bin Vibrator

A bin vibrator to insure continuous smooth flow of materials that have a tendency to clog bins and chutes is announced by Eriez Mfg. Co., Erie 6, Pa.

Circle T-61 on Reader-Service Card

Air-Line Controls

Air-line controls that provide clean and properly lubricated air used on all air-operated equipment are offered by Alemite Div., Stewart-Warner Corp., 1826 Diversey Pkwy., Chicago 14, Ill.

Circle T-62 on Reader-Service Card

Floor Finish

A floor finish with wearability and gloss-retention properties several times greater than the finest varnishes is

your no. 1 source

GARLAND

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LOOM PICKERS . . . RAWHIDE and PLASTIC

BUNTERS

LEATHERS

ROD LUBE

Send for complete information on ALL Garland textile products. Ask for special data on new Garland plastic loom pickers.

Garland MANUFACTURING CO

Also manufacturers of Nylon and Rawhide Hammers and Mallets.

50 WATER STREET • SACO, MAINE

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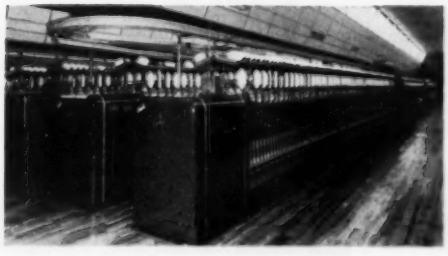
...the satisfaction of seeing your decision to buy Platt machinery justified

When you receive machinery does it always do the job you thought it would?

Purchasers of machinery from Platt Bros. (Sales) Ltd. *know* how many more pounds will be produced per shift. By what labor. In what floor space. At what price per spindle and how much this new spinning will save per year.

They have studied samples of their own stock run on the type frames they ordered. They have in their possesion a complete laboratory analysis of the results — spinning tests on any of the new type synthetics they contemplate running, regularity tests, strength and count tests, twist tests, etc. and these tests form a part of the warranty made by the world's largest manufacturer of textile machinery. We invite you to secure such a portfolio of facts before making any decision to purchase new spinning, roving, carding or opening machinery. This is part of our regular service.

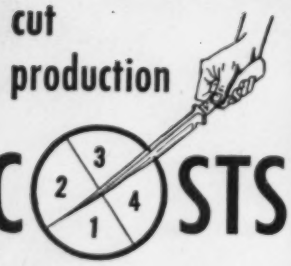
Manufacturer: **PLATT BROS. (SALES) LTD., Oldham, England**
Marketing the textile machinery of Platt Bros. & Co. Ltd., Howard & Bullough Ltd. & Dobson & Barlow Ltd.
Agents: **ATKINSON, HASERICK & CO. INC., Framingham, Charlotte, Greenville, Philadelphia & Bradford, Eng.**



The new Platt M.R. 3 Ring Spinning Frame is meeting all competition on the basis of quality and cost. Good engineering and careful attention to the requirements of new spinning techniques have produced a new frame mechanically simple and reasonably priced. It is an all-count, all-purpose machine to handle varying raw materials. It is capable of producing wide ranges of yarn characteristics. A greater proportion of the operator's time is spent on productive work and considerably less on cleaning and maintenance. Before purchasing new frames, it will pay you to get competitive quotes on Platt equipment.

For more data, circle A-121 on Reader Service Card

cut production COSTS 4 ways! ... with



MECHO AIR GUIDER

1 SAVE by eliminating expensive spoilage!

2 SAVE by cutting handling costs, reducing damage and loss!

3 SAVE by reducing costly equipment repairs!

4 SAVE with the low initial and operating cost of the Mecho Air Guider!

Hundreds of finishing plants bless the simplicity of operating a Mecho Guider . . . no complicated counterweights or linkages! The sensitive selvage finger points the way to important savings! It handles every imaginable fabric from the lightest to #8 duck; is used in plants handling woven and non-woven fabrics, semi-rigid plastics, artificial leather, rubber, felt and gauze. Constant cloth alignment is maintained at all times.

The precision-engineered accuracy of the Mecho Air Guider, guiding to within an eighth of an inch and ranging from 1 to 400 ypm, is unsurpassed! Stainless steel, acid and moisture-resistant units with sealed bearings are also available.

Mecho offers a valuable Guiding Service. Phone, wire or write for your catalog today. Learn how the Mecho Air Guider can save dollars for you.

GUIDER SPECIALTY COMPANY
431 W. Rock Ave.
New Haven 15, Conn.

South. Rep: McSPADDEN & SCANTLAND
P.O. Box 3635, Charlotte 3, N. C.
New England Export Rep:
THE STANDARD MILL SUPPLY CO.
P.O. Box 1534, Providence 1, R. I.

Circle A-122 on Reader Service Card

now being trial-marketed by Finishes Div., E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle T-63 on Reader-Service Card

Surfacing Material

A structural surfacing material claimed to be harder than concrete that welds to new or old masonry has been marketed by Permagile Corp. of America, 34-43 56th St., Woodside 77, N. Y.

Circle T-64 on Reader-Service Card

Micarta Wheels

Designed for heavy-duty service under severe operating conditions, Westinghouse Micarta wheels are now being used on casters manufactured by Payson Mfg. Co., Chicago 12, Ill.

Circle T-65 on Reader-Service Card

Pallet Boxes

A reusable pallet box with added resistance to bulging of the sides under load by a restraining cleat is offered by General Box Co., Des Plaines, Ill.

Circle T-66 on Reader-Service Card

Label Printer

Labels in roll form that are partially preprinted may be overprinted or marked completely from blank stock with a machine offered by Markem Machine Co., Keene 64, N. H.

Circle T-67 on Reader-Service Card

Infrared Lab Kit

For investigation of processing applications on a laboratory scale, Lighting Div. of Safety Industries, Inc., P. O. Box 70, Milford, Conn., has developed an infrared laboratory kit.

Circle T-68 on Reader-Service Card

Glass Y-Valve

Only glass and Teflon contact liquids passing through a valve marketed by Corning Glass Works, Corning, N. Y.; the valve is suited to

A SAVING AT EVERY TURN

DARNELL CASTERS AND WHEELS

Always SWIVEL and ROLL

Darnell Casters and Wheels start cutting costs from the very first day of installation. Easy rolling and swivelling increase employee efficiency, save floors and help add to production. With over 4000 types of casters and wheels to select from you can specify the exact model to meet your requirements.

Look in the Yellow Pages under Casters and Wheels. Your local Darnell Distributor carries a complete stock of Darnell products.

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36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

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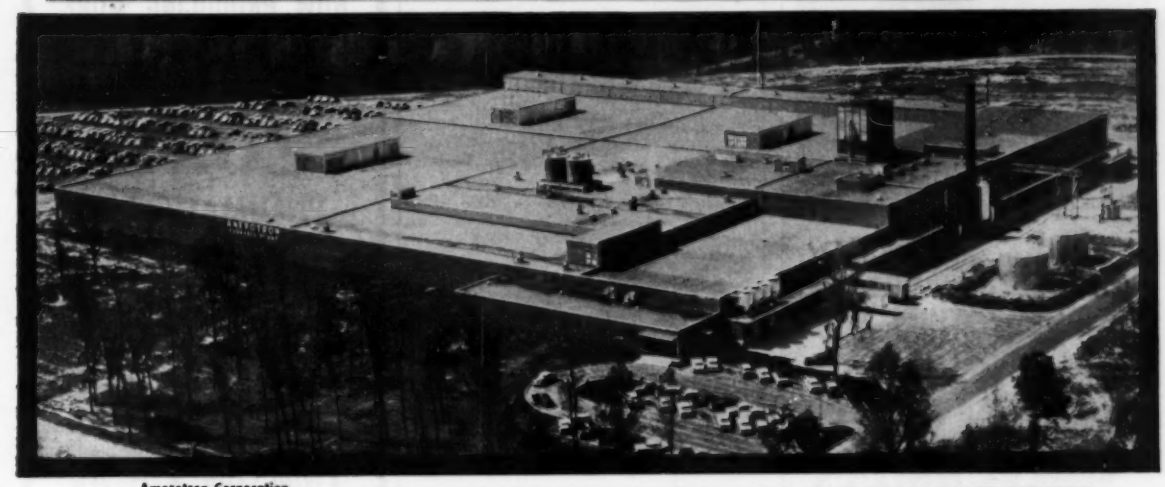
LOCKWOOD GREENE PROJECTS IN...
WOOLEN and WORSTED

Lockwood Greene has completed over 500 engagements in the woolen and worsted field, and in the entire textile industry projects valued at over three quarter billion dollars.



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Division of Textron American, Inc.
A fully air conditioned plant of 528,000 sq. ft. floor area, with new machinery on men's and women's wear woolens, its purpose to recapture the position formerly held by the American Woolen Co. when it concentrated its operations in New England.

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For faster testing of—

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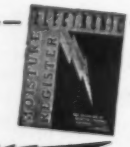

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Please send data on new Model 5's.

We are testing _____

in moisture range from _____% to _____%

Firm _____

By _____ Title _____

Address _____

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handling most corrosive liquids except hydrofluoric acid, hot phosphoric acid, or hot alkalis.

Circle T-69 on Reader-Service Card

Tax Computer

A tax computer that will cut payroll computing time in half is available from Calcu-Tax Corp., 49 W. 37th St., New York 18, N. Y.

Circle T-70 on Reader-Service Card

Motors

A line of inherently protected, three-phase, small integral-horsepower motors is announced by General Electric Co., Schenectady 5, N. Y.

Circle T-71 on Reader-Service Card

Analyzer

An instrument for making automatic colorimetric analysis simple and inexpensive is announced by Florida Instrument Co., 1300 E. Mermaid Lane, Philadelphia 18, Pa.

Circle T-72 on Reader-Service Card

Clamp Attachment

A multipurpose clamp attachment for electric fork-lift trucks is being offered by Lewis-Shepard Products, Inc., Dept. R8-14, Watertown 72, Mass.

Circle T-73 on Reader-Service Card

Carton Printer

A manually operated machine that imprints contents, brand, distributor's or packer's name and address on shipping containers is being manufactured by Rotary Imprinter, Inc., Box 31, Hillside, N. J.

Circle T-74 on Reader-Service Card

Stapler

A machine that sets up empty boxes and seals ordinary shipping cases with staple clips in a few seconds is being offered by Container Stapling Corp., 308 N. Park Ave., Herrin, Ill.

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85 MILLS

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PNEUMATIC LAP CONTROL SYSTEM

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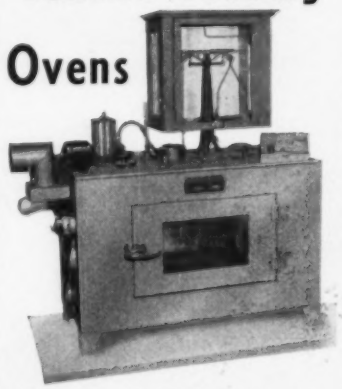
Textile Testing Ovens



EMERSON OVENS

For accurate testing of water content in yarn, small wool samples and other textile material. The 8 Basket Oven, shown above, can be furnished with 8 baskets 3" sq. x 6" deep or 6 basket 4½" sq. x 6" deep, complete with weighing balances, sensitive to 3 mg., weights and automatic temperature control. Table space 20" x 40".

Details of other style Ovens with specially designed baskets to handle YOUR TESTING PROBLEM on request.

EMERSON APPARATUS CO.
177 Tremont St. Melrose 76, Mass.

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CONTINUED FROM PAGE 22

Runner Lengths For 40-Den. Tricot

Technical Editor:

What are the best runner lengths for 40-den. tricot fabrics with low yields? (1414)

The correct runner lengths will largely be determined by the end uses required for the fabric. Below are some suitable runner lengths for 40-den. tricot fabrics suggested by Textile Machine Works.

Quality (ins.)	Top runner (ins.)	Bottom runner (ins.)	Courses per inch
5½	60	42	
5.88	60	42⅞	84
6	60	45	
6	60	40⅝	80
6¼	57	42¾	
6½	59	44¼	
7¾	61½	46½	62
9½	63	54	
9½	65	53	50.5
10	66	55	48
10	64	54	
10	65	54	
10¾	71	55	
11.2	68.8	51.6	43
12	71	54	40
12	70	55	40

How To Count Neps In the Card Web

Technical Editor:

What is the best way to make regular nep counts at the card? (1432)

There are a number of different ways to make nep counts. Probably the most common method is to place a sample of the card web under a 10x5-in. glass marked off in 1-in. squares for counting.

Some mills check a sample taken from the entire width of the web. Then there is a special template developed some years ago by N. C. State College that is very helpful. Some mills take the weight of the web into consideration, but this method is not too common.

Still another method consists of placing a board with 30 round holes (1-sq.-in. area) over the web. Neps showing through the holes are counted and converted to the equivalent of 100 sq. ins. of card web.

One of the most accurate methods of counting neps is to use a black felt or velvet covered board with a metal plate hinged to it.

The plate has 20 round holes spaced uniformly, and each hole covers an area of 1 sq. in.

All neps that show through the holes, regardless of size, are counted. Five samples are taken so that 100 sq. ins. of web is thoroughly checked. Weight of the stock is considered, and the nep count is applied to this formula:

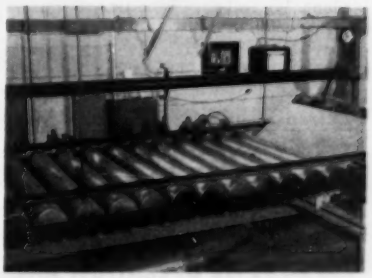
$$\text{Neps per grain} = \frac{1{,}440 \text{ grains} \times \text{neps per 100 sq. ins.}}{\text{Grain weight of 1 yd. of sliver}}$$

LOWER PRODUCTION COSTS

of your present PROCESSING EQUIPMENT

with

Multi-Frequency THERMAL RADIATION GENERATORS



PRE-DRYING:

Increases drying speed of standard hot-air dry boxes.

HEAT-SETTING:

Heat-set synthetic pile fabrics at higher speeds with better quality and shrinkage control.

CURING:

Cure pigment-binding resins and finish resins at higher speeds (for woven fabrics and knitted fabrics in tubular form).

ADVANTAGES

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says-PHILADELPHIA QUILTING CO.

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Chief Maintenance Engineer

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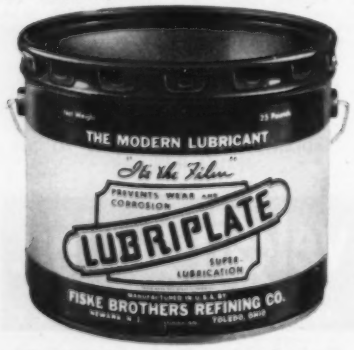


Circle A-131 on Reader Service Card

Temperature Controls Respond to Change in Eight Ways

Textile engineers and production heads have recently bumped squarely into the complicated business of more accurately measuring, recording, and controlling process temperatures.

The results of accurately controlling temperatures are better quality and uniformity of yarns and fabrics, more-automatic production, and eliminated waste.

A mill engineer needs a perspective view of the whole control field before he can evaluate his own sphere of service properly. Any apparatus for temperature measurement or control relies on one of eight ways of responding to temperature:

1. Changes in Pressure

When a gas is confined and raised in temperature, it exerts increasing pressure on the confining vessel. The gas generally used is nitrogen.

This method is limited to laboratory use, calibration of industrial instruments, and closing of light electrical contacts.

When a liquid partially fills a vessel and its vapor fills the remaining space, the pressure exerted by the vapor varies with the temperature of the liquid. That's the way the temperature gauge in your auto probably works.

Alcohol, ether, and sulfur dioxide are frequently used fluids. Vapor-liquid instruments are essentially pressure gauges graduated for temperature.

2. Changes in Liquid Volume

Liquids are incompressible fluids. When they are heated, they expand; and as long as they do not vaporize, the volume of a contained amount is an exact measure of its temperature. A common example of liquid expansion is a simple glass thermometer: the bulb is filled with mercury, and the capillary is sealed with nitrogen under pressure.

3. Difference in Expansion of Metal

Metals of different coefficients of expansion permit temperature measurement if they are fixed together at one end and linked through articulated mechanisms at the other. The rod-and-tube thermostat utilizes this principle. One example is an Invar rod in a brass case.

Bimetallic elements in strip, coil, or disk form are two-ply systems in which dissimilar sheet metals are bonded face to face so that the differential expansion of the two metals causes gradual warping or bending. Then the structure snaps to a new position. Bronze and steel are often used together.

4. Changes in Electrical Resistance

Fine nickel or platinum wires change significantly in electrical resistance with temperature. Precision coils or ceramic forms are often used as one leg of a Wheatstone's bridge in either manual or automatic potentiometer circuits.

5. Thermocouples

An electromotive force is generated at the welded junction of any two dissimilar metals when the junction is heated. The cold ends are connected to a galvanometer coil. Proper pairs of metals are: (1) copper and constantan, (2) iron and constantan, (3) chromel and alumel, and (4) platinum and rhodium.

6. Photoelectric Effects

Surfaces coated with certain alkaline metals, notably selenium, emit streams of electrons when exposed to radiation. The flows of electrons produce feeble currents that are amplified electronically. Thus the temperature of a heated body is measured through its total radiation to a photoelectric cell.

7. Changes in Color

The color, distribution of black body radiation, from a part or chamber heated to incandescence is a measure of its temperature.

The optical pyrometer that's used at temperatures too high for bulbs and thermocouples is based on matching the color of an electrically heated filament to the color of the furnace or kiln contents viewed through the instrument.

This method does not permit automatic control; an operator is required.

8. Changes in Melting Point

A series of cylinders or cones made of graded materials that soften and collapse at progressively increasing temperatures measure temperatures. *Partlow Corp.*

NEWS ABOUT SUPPLIERS

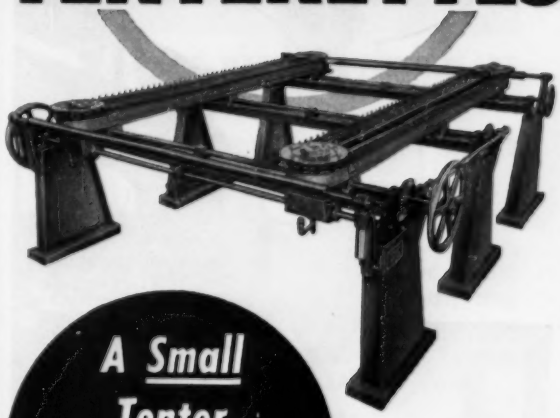
ALLIED CHEMICAL CORP., SOLVAY PROCESS DIV., New York, N. Y.—Has named S. D. Fisher manager of the St. Louis, Mo., sales branch. L. R. Whiteside has been named manager of the Chicago, Ill., sales branch. . . . **ALLIS-CHALMERS MFG. CO.**, Milwaukee, Wis.—Has named R. H. Porterfield industrial sales manager of the New York district. W. T. Farnsworth has been named manager of the Hartford, Conn., district. J. Varacalli has been appointed supervisor of original equipment manufacture and distributor sales for the New York district. E. E. Strickland has been named manager of general-products division sales for the Industrial Group's Northeast region, with headquarters in New York. K. H. Wahl and H. H. Hood have been named sales representatives in this region. . . . **AMERICAN CYANAMID CO.**, New York, N. Y.—Has appointed R. M. Goddard manager of the process-chemicals department.

IRWIN AMES (left) has been named technical sales representative for Synthron, Inc., Ashton, R. I. ROBERT L. HIGH (center) has been named director of applied research at Keever Laboratories, Keever Div. of National Industrial Products Co., Columbus, Ohio. ERNEST FRANK (right) has been named sales manager of the International Div., Textile Machine Works, Reading, Pa.

AMERICAN MONORAIL CO., Cleveland, Ohio—Has granted licenses to Parks-Cramer Co., Fitchburg, Mass., and American Moistening Co., Cleveland, Ohio, to use its basic patents on textile machinery. . . . **ARMSTRONG CORK CO., INDUSTRIAL DIV.**, Lancaster, Pa.—Has named E. W. Jones field-sales manager, C. B. Grove general manager of market development, and G. K. Billipp manager of new-product development. These positions are newly created. . . . **BRISTOL CO.**, Waterbury, Conn.—Has named H. E. Beane, Jr., sales engineer serving the Albany-Syracuse area. . . . **CELANESE CORP. OF AMERICA, FIBERS DIV.**, New York, N. Y.—Is the new name of the Textile Div. J. L. Barach has been named sales-development manager and R. P. Wilson assistant general-sales manager.

CHASE BAG CO., New York, N. Y.—Has elected W. N. Brock vice president and director of sales. H. B. Rue has been elected vice president and general sales manager. . . . **CLINTON CORN PROCESSING CO.**, Clinton, Iowa—Has named H. C. Nickelsen district sales manager for the Metropolitan New York area. . . . **E. I. DU PONT DE NEMOURS & CO., INC.**, Wilmington, Del.—Has opened a research center for its Electrochemicals Dept. in Niagara Falls, N. Y. . . . **EASTERN ENGINEERING CO.**, Atlanta, Ga.—Has named R. A. Harden, Jr., textile engineer and consultant. . . . **EATON MFG. CO., DYNAMATIC DIV.**, Kenosha, Wis.—Has named R. E. Mitchell plant manager. . . . **FAFNIR BEARING CO.**, New Britain, Conn.—Has elected K. T. Middleton and R. F. Cooper administrative vice presidents. R. W. Powell has been elected vice-president in charge of sales. F. S. Atwater has been elected vice president in charge of manufacturing, and R. B. Robert has been elected treasurer.

Order M&W TENTERETTES



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M & W Tenterette: 30", 80" or 100" long, using our No. 12 tenter clip. We build to any maximum width, with either straight or hinged rails. Serves many uses.

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work . . . says "Mark-O-Merit" ®

moves *faster*

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Shamrocks

Let a Shamrock representative check your plant. His constant contacts with mill operations can prove helpful to your problems.

Your Shamrock representative is a trained *specialist* in the application of Shamrock Canvas Baskets and Trucks to varied plant operations. He can help in suggesting efficient work flow systems—using standard or made-to-order Shamrock styles to fit your particular plant needs. *Get his helpful advice!*

Shown above is the Shamrock No. 19 Truck, leather reinforced around top rim and at ends of strips; this Shamrock is being used for transporting yarn on cones. For complete information, write direct or contact nearest sales office listed below. MEESE, INC., Madison, Indiana.

SALES OFFICES: NEW YORK—F. R. Tyroler, 55 West 42nd St., PE 6-0615; ATLANTA—W. E. Petway, 723 Densley Drive, North Decatur, Ga., ME 6-3192; FORT WORTH—V. M. Hooton, 4220 Normandy Road, Tel. JEfferson 6-6564; WEST COAST—Gene Daniels Sales Co., P. O. Box 846, La Puente, Calif., EDgewood 3-2116. Export Mgr.—R. A. Auerbach, Easton, Pa. Cable Address: "Natly."

SHAMROCK

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NEWS ABOUT SUPPLIERS Continued

FAULTLESS CASTER CORP., Evansville, Ind.—Has named R. B. Burris plant manager. . . . **FOSTER MACHINE CO.**, Charlotte, N. C.—Has moved its southern office to 1205 Johnston Building, Charlotte. . . . **GATES RUBBER CO.**, Denver, Colo.—Has named D. L. Peterson general manager and C. W. Gish superintendent. . . . **GEIGY DYESTUFFS, DIV. OF GEIGY CHEMICAL CORP.**, Ardsley, N. Y.—Has started building a one-story, 60,000-sq-ft. building in Charlotte, N. C., to house offices, a laboratory, and a warehouse. . . . **GENERAL LATEX & CHEMICAL CORP.**, Cambridge, Mass.—Has opened a new compounding plant at 2321 N. Davidson St., Charlotte, N. C. Jack Hobbs is district sales manager. . . . **GENERAL MILLS, CHEMICAL DIV.**, Kankakee, Ill.—Has opened a new Southeastern sales office in Charlotte, N. C. . . . **B. F. GOODRICH CHEMICAL CO.**, Cleveland, Ohio—Has named T. B. Nantz vice president of manufacturing.

W. C. DOUGAN (left) has been named district manager of the New York sales office of Dobeckmun Co., New York, N. Y. J. MILLER BYNE, III, (center) has been assigned to the Southern sales territory for Becco Chemical Div., Food Machinery & Chemical Corp., Buffalo, N. Y. FRANK F. MYERS (right) has been named manager of the Charlotte, N. C., office of Geigy Dyestuffs, Div. of Geigy Chemical Corp., Ardsley, N. Y.

RALPH GOSSETT & CO., Greenville, S. C.—Has named R. H. Griffith and I. Payne, Jr., Chattanooga, Tenn., to represent the company in the sale of metallic yarn manufactured by Nylco Products, Inc., Clinton, Mass. H. O. Fry will represent the company in the sale of nylon, Dacron, rayon, and acetate yarn distributed by Brawer Bros. Silk Co., Inc., in Chattanooga. . . . **GREENVILLE STEEL & FOUNDRY CO.**, Greenville, S. C.—Has announced that Parrott & Ballentine, Greenville, will handle Southern sales of the company's textile machinery. . . . **IRA L. GRIFFIN SONS, INC.**, Charlotte, N. C.—Has announced that it is now the only licensed manufacturer and distributor of Griffin size applicators. . . . **HEANY INDUSTRIAL CERAMIC CORP.**, New Haven, Conn.—Has named R. L. Carroll, Greenville, S. C., exclusive representative in the Southern states.

HEYDEN NEWPORT CHEMICAL CORP., New York, N. Y.—Has named L. F. Pinto manager for rubber chemicals of the Newport Industries Div. Nuodex Products Co. Div. has named D. W. Klohs technical-sales representative for the Vinyl Additive Div. . . . **HUBINGER CO.**, Keokuk, Iowa—Has named J. M. Search sales representative in metropolitan New York. . . . **INTERCHEMICAL CORP.**, New York, N. Y.—Has named J. E. Renson director of market research. . . . **JARO CHEM**, Dallas, Tex.—Has been named sales representative for Colton Chemical Co., a division of Air Reduction Co., Inc., Cleveland, Ohio. . . . **M. W. JENKINS' SONS, INC.**, Cedar Grove, N. J.—Has elected S. E. Worden president and treasurer. A. J. Christensen has been named secretary and vice president. . . . **KOPPER CO., INC.**, Pittsburgh, Pa.—Has named C. E. Brown manager of the marketing department of the Tar-Products Div. G. D. Melville has been named manager of the planning department, and E. D. Losch has been named contract manager in the

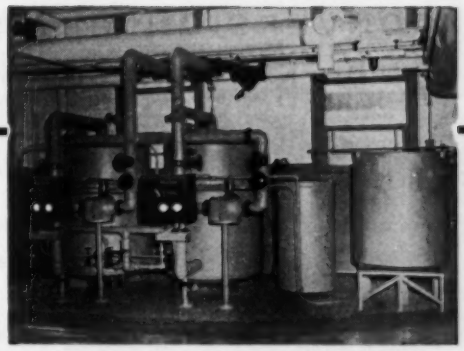
procurement department. The company will start building a new research center at Monroeville, Pa., this year.

WILLIAM B. GUERRANT (left) has been named district sales manager for textile fibers sales for Dow Chemical Co, in Charlotte, N. C. HUGH K. SMITH (center) has been named a representative in Georgia and Alabama for Stedco-Southern, Inc., a subsidiary of Steel Heddle Mfg. Co., Philadelphia, Pa. L. T. PARKMAN (right) has been named head of the new Southern office of Riggs & Lombard, Inc., Charlotte, N. C.

MARKEM MACHINE CO., Keene, N. H.–Has expanded the sales territory of F. T. Suehle & Son, Philadelphia, Pa., to include all textile, hosiery, and apparel firms in northern New Jersey and textile and apparel firms in southern New Jersey and eastern Pennsylvania. . . . **METRO-ATLANTIC, INC.**, Centredale, R. I.–Has moved its New Jersey office, laboratory, and warehouse to Fairlawn, N. J. . . . **METLON CORP.**, New York, N. Y.–Has appointed H. C. Cobb, Jr., sales manager for metallic yarns in North Carolina, South Carolina, and Virginia. . . . **MONSANTO CHEMICAL CO.**, St. Louis, Mo.–Has completed a sodium-polyphosphate plant in Long Beach, Calif. It is expected to be on stream by the middle of this month. The company has also completed expansion of its chlorosulfonic-acid facilities at the William B. Krummrich Plant, Monsanto, Ill. . . . **MORNINGSTAR-PAISLEY, INC.**, New York, N. Y.–Is producing liquid vinyl chloride and natural and man-made latex compounds at its new Clifton, N. J., plant. . . . **B. L. MONTAGUE CO., INC.**, Sumter, S. C.–Has opened a conveyor-sales division at Greenville, S. C., with C. E. Green as director of conveyor sales and J. W. Thompson chief conveyor engineer.

NATIONAL RING TRAVELER CO., Pawtucket, R. I.–Has named N. A. Jerome superintendent of the company's plant in Pawtucket. . . . **NATIONAL STARCH PRODUCTS, INC.**, New York, N. Y.–Has appointed H. Sterne staff assistant in the Atlanta, Ga., headquarters. . . . **ONYX OIL & CHEMICAL CO.**, Jersey City, N. J.–Has merged the sales departments of the textile, paper, and industrial divisions. . . . **ORIGINAL BRADFORD SOAP WORKS, INC.**, West Warwick, R. I.–Has named R. H. Pearson assistant sales manager. . . . **PROCTOR & SCHWARTZ, INC.**, Philadelphia, Pa.–Has transferred D. D. Cunningham to the company's Providence, R. I., office. . . . **ROYCE CHEMICAL CO.**, Carlton Hill, N. J.–Has named A. J. Royce chairman of the board and chief executive officer. A. J. Royce, Jr., has been named president.

SKF INDUSTRIES, INC., Philadelphia, Pa.–Has acquired Reed Instrument Bearing Co., Los Angeles, Calif. . . . **SACO-LOWELL SHOPS**, Boston, Mass.–Has bought Servo Dynamics Corp., Somersworth, N. H. Arthur Howard has been named Victor sales coordinator and has been transferred to the Greenville, S. C., office. J. L. Cherry has been named advertising manager for the company. . . . **SINCLAIR CHEMICALS, INC.**, New York, N. Y.–Has changed its named to Sinclair Petrochemicals, Inc. . . . **A. E. STALEY MFG. CO.**, Decatur, Ill.–Is building a new research center to be completed in mid-1960. . . . **WHITIN MACHINE WORKS**, Whitinsville, Mass.–Has announced that J. A. McCall has joined the Atlanta, Ga., sales office. M. P. Thomas has joined the Charlotte, N. C., office.



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Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

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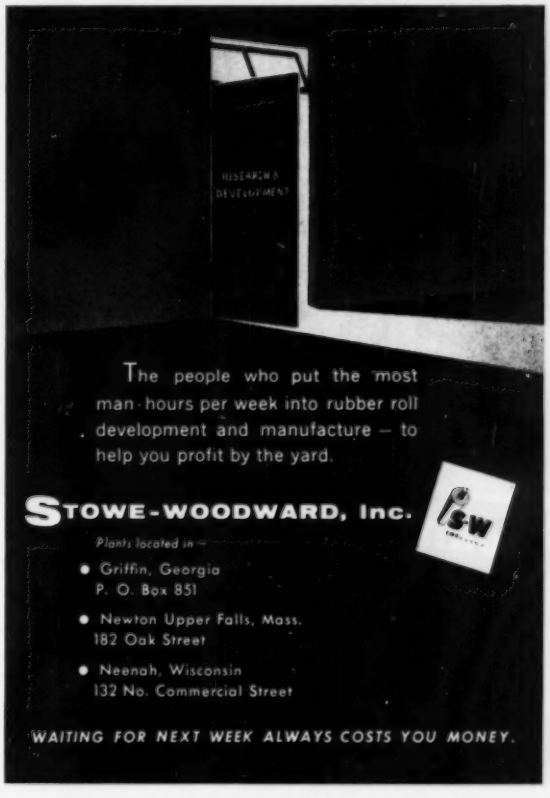
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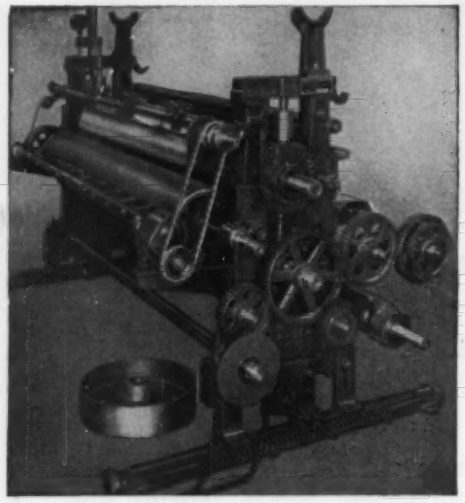

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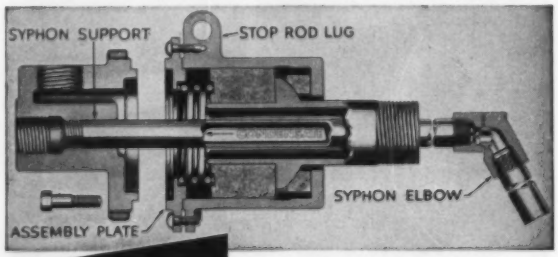

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Shows self-supporting Johnson Joints for all needs . . . on print cans, calenders, compressive shrinkage ranges, big 5' and 7' cotton slashers, dry cans, etc.

THE JOHNSON CORPORATION
814 Wood St., Three Rivers, Mich.

188 For more data, circle A-137 on Reader Service Card

NEWS ABOUT MEN

L. M. Asken has been named vice president in charge of the knit-goods division of Russell Mfg. Co., Alexander City, Ala.

E. H. Atkins has been named superintendent of the new Foster plant of Alice Mfg. Co., Easley, S. C.

Edward A. Bacchi, former president of Cluett, Peabody & Co. of Canada Ltd., has been elected vice president in charge of merchandising of Cluett, Peabody & Co., New York, N. Y.

Henry M. Baker has been named a vice president of Slane Hosiery Mills, New York, N. Y. He will continue his duties as manager of the company's New York sales office.

Albert J. Bartson has retired as president of Albert J. Bartson, Inc., Midland Park, N. J. He will serve as chairman of the board and will act as a consultant with the firm.

Paul E. Bentsen has joined the styling department of Burlington Men's-Wear Fabrics Co., New York, N. Y.

Carlysle Bethel has been elected a director of Hanes Hosiery Mills Co., Winston-Salem, N. C.

Ira Birnbaum has been elected vice president of Native Laces & Textiles, New York, N. Y. He will also continue as secretary. In his new capacity he will serve as director of all plant operations.

F. E. Bobo, Jr., assistant vice president of Chadbourn Gotham, Inc., Charlotte, N. C., has been named manager of the company's women's-hosiery division.

Rol H. Brownlee has been appointed vice president and general manager for sales and marketing at Cabin Crafts, Inc., with headquarters in Dalton, Ga.

Victor L. Carmona has been named head of the men's- and boys'-wear division of Kennebec Mills Corp., Fairfield, Me.

Albert M. Carson has been named vice president of Burlington Ribbon Mills, Greensboro, N. C.

JOSEPH A. GOLDEN has been named president of the newly created division of Burlington Industries, Rhodhiss-Pacific Mills, with plants at Rhodhiss, N. C.

Grace Jones Columbo has been elected a director of Hanes Hosiery Mills Co., Winston-Salem, N. C.

W. H. Dean has been appointed general overseer of quilling at Judson Mills, Greenville, S. C.

W. A. Edwards has been named superintendent of Avondale Mills' Bevelle Plant, Alexander City, Ala.

Miss Joan Evans has been named stylist for the Berkshire brand of hosiery manufactured by Berkshire Knitting Mills, Reading, Pa.

T. J. Floden has retired as chairman of Nelson Knitting Co., Rockford, Ill.

Fred Y. Fox has been named canton-flannel superintendent of Riegel Textile Corp., Conover, N. C.

P. Frank Hanes, Jr., has been appointed assistant manager of P. H. Hanes Knitting Co., Winston-Salem, N. C.

A. Clayton Hedgepeth has been elected a vice president in charge of manufacturing of Sidney Blumenthal & Co., Inc., Rocky Mount, N. C.

Millard F. Holland has retired as canton-flannel super-

intendent of Riegel Textile Corp., Conover, N. C.

Paul Jambor has been named chief designer for women's wear for the Forstmann Div. of J. P. Stevens & Co., Inc., New York, N. Y.

E. E. Jones has been elected vice president and assistant sales manager of Johnston Mills Co., with headquarters in Charlotte, N. C.

J. L. Lanier, Jr., has been named assistant manager in charge of West Point Mfg. Co.'s gray-goods mill at Fairfax, Ga.

Marguerite Lawton has been named designer for the infants' division of William Carter Co., Needham, Mass.

James E. Lawton has retired from American Velvet Co., Stonington, Conn., as head of the dyeing and finishing department. He will continue to serve as a director.

Frank Lipe has been reelected president of Linn Mills Co., Landis, N. C.

Hugh Loud has been appointed vice president of sales of Burlington Mills, Inc., Burlington, Wis.

Robert M. Lynch has been named vice president in charge of production at Paul Knitting Mills, Inc., Pulaski, Va.

Frank X. Magarahan has retired as assistant manager of J. P. Stevens' Appleton Plant, Anderson, S. C. Robert L. Hale will succeed him.

James F. Magarahan has been appointed assistant to Robert Bendheim, vice president in charge of Lyman Printing & Finishing Co., Rock Hill, S. C.

Grayce McMahon has been named stylist for Wamsutta women's and children's fabrics, New York, N. Y.

Lawrence Marx, Jr., vice president of Clearwater Finishing Co., Clearwater, S. C., has been named president of the National Association of Finishers of Textile Fabrics.

JAMES J. BATES has been named product director of the Lumite Div., Chicopee Mills, Inc., Buford and Cornelia, Ga.

Walter S. Montgomery, Jr., has been appointed vice president of Spartan Mills, Inc., Spartanburg, S. C.

Ed Murray has been promoted to superintendent of the yarn-manufacturing department of Pacific Mills at Lexington, N. C.

Thomas B. Murray has been transferred to Pacific Mills' headquarters at Halifax, Va.

Allen J. Nelson has retired as superintendent of Springfield Woolen Mills, Springfield, Tenn.

Frank Newman has been promoted to superintendent of cloth at Pacific Mills, Lexington, N. C.

Irvin L. Payne has been promoted to superintendent of Dan River's Alabama Div. He will make his headquarters in Montgomery, Ala.

Iver A. Rolfe has been elected president of Morgan Dyeing & Bleaching Co., Rochelle, Ill.

J. E. Rolfe has been elected chairman of the board of Morgan Dyeing & Bleaching Co., Rochelle, Ill.

Fred L. Rosenberg has been named vice president in charge of sales at Security Mills, Inc., Newton, Mass.

Arnold Rubenstein has been named vice president in charge

MODEL 31 AD
Piece-end Sewing with SAFE Retractable Pins

20" dia. cloth wheel with 6 pairs of pins retracted by cam for automatic cloth stripping. Retracted pins are safe. Heavy duty gear type sewing head. Single chain stitch. Wide range of stitch adjustments. Motor drive.

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Complete engineering service apart of every McBride installation.

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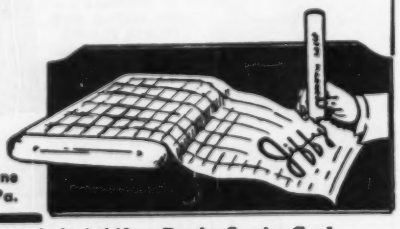

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of manufacturing at Secu.ity Mills, Inc., Newton, Mass.

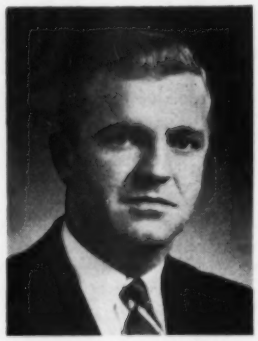
Irving Shapiro has been elected executive vice president and a director of Glenoit Mills, Inc., a wholly owned subsidiary of Botany Mills, Inc., Janesville, Wis.

G. G. Simmons has been elected treasurer of Hartsville Cotton Mill, Hartsville, S. C.

Joseph E. Stiassni has been named a vice president and assigned to the women's-wear division of Forstmann, Inc., New York, N. Y.

C. K. Torrence has been named president of Superior Yarn Mills, Gastonia, N. C.

Ray Wagner has been elected president of Crown Knitting Mills, Inc., Mohrville, Pa.



PHILIP A. ROTH has been elected to the board of directors and executive committee of Collins & Aikman, New York, N. Y.

Thomas S. Waller has been appointed plant manager of Celanese Corp.'s spun-yarn plant at Burlington, N. C.

Textile World

OBITUARY

Edward D. Brady, 63, vice president of Waucantuck Mills, Uxbridge, Mass.

Ernest Bradley, 80, retired superintendent of the Magog Print Works of Dominion Textile Co. Ltd., Montreal, Que.

William O. Buzzell, 77, formerly prominent in textile manufacturing, New Bedford, Mass.

Alfred C. Gaunt, 76, retired president of Merrimac Mills, Methuen, Mass.

Sam Horowitz, 57, retired vice president and Eastern sales manager for Phoenix Hosiery Co., Milwaukee, Wis.

George W. Herrick, Jr., 64, a director and retired secretary and treasurer of Aberfoyle Mfg. Co., Philadelphia, Pa.

Andrew W. Macy, 71, retired general superintendent and treasurer of Nashawena Mills, New Bedford, Mass.

P. B. Mitchell, 77, an official of Joanna Cotton Mills, Joanna, S. C.

Joseph Moskow, owner of Altamont Knitting Mills, Wilkes-Barre, Pa.

William F. Regnery, 54, president of Joanna Western Mills Co., Chicago, Ill., and Joanna Cotton Mills Co., Joanna, S. C.

Briant S. Stringham, 63, president of Utah Woolen Mills, Salt Lake City, Utah.

Harold Wollner, 53, president of Wollum Products, Inc., Atlanta, Ga.

Ira J. Wagner, 54, president of Crown Knitting Mills, Mohrville, Pa.

Carl J. Wiedemann, 59, vice president of Raeford Worsted Corp., New York, N. Y.

James Wilcox, 62, vice president and treasurer of Columbus Coated Fabrics Co., Columbus, Ohio.

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PERSONNEL for challenging R & D assignments in expanding Nylon 6 project. Positions require extensive R & D fiber experience. Advanced technical degree with strong mechanical or physics background desirable.

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COMPENSATIONS: Excellent base salary with regular Merit increases; Steady employment; Liberal Health, Accident, Retirement and Vacation Benefits.

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Good opportunity for experienced weave designer in worsteds and woolens as assistant to technical manager New York office. Send detailed resume including salary requirements.

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Celanese has challenging opportunities in the Fibers Division Development and Process Laboratories located in Charlotte, N. C. for graduate engineers with the following qualifications:

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Applicants must possess a Bachelor's degree, preferably in Textile Engineering, and have a minimum of 3 years' experience in the synthetic fiber field involving textile processing, quality control, and/or testing and evaluation.

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Active Mfgrs. Reps. Handling non competitive loom supplies wanted to sell our Hardwood Picker Sticks in several Southern States, New England and Pa. on commission basis. Write with resume to RW-9537, Textile World.

Salesman, novelty yarns, thoroughly experienced. Following. SW-9985, Textile World.

POSITIONS WANTED

Production Mgr. or Technician, Filament and Silk, Plain and Jacquard. Available immediately, best references. PW-9370, Textile World.

Experienced Screen Printer, 26, German, specialized in Screen Pattern Making seeks position in screen printing mill. No language difficulties. Ability to organize screen pattern department. PW-9886, Textile World.

Additional Employment Advertising on page 192

DYER

Opening available immediately for qualified Top Dyer or Raw Stock Dyer. Must have strong background in Supervision and extensive ability in color matching. Prefer college graduate.

Leading textile firm located in North Carolina City of 100,000 population. Excellent growth potential for right man. Full benefits and salary in line with past experience.

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3 Atwood 10B Twisters, 116 spdls 1950

20 Whitin F2 Spin Frames, 4" ga. 240 spdls

3 Abbott Quill Winders, 100 spdls 1953

24 H&B Rubber Cover, 96 Arnold spdls

1 Terrell, Model L Stripper

LOOMS

16 C&K C4, 78" convert 1949

14 Draper XD 64", dobby motor

40 Draper XD, 46", cam, motor

24 C&K W3, 82", motor

28 Narrow Fabric Looms

DYEING AND FINISHING

1 Hunter 9 bowl Washer, 90", 1952

1 V. V. Hyd. Calender, 65", 80 ton, 1948

4 V. V. 70" Stainless Dye Jiggs

1 Burlington Beam Dyer, 64"

1 National Loop Dryer E, 102", 8 fans

4 RB&F Print Machines 8 color-48", 12 color-52" 4 color-48"

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"Reconditioned, Excellent Equipment at Low Prices."

1—8-Color & 1-6-Color Rice, Barton & Fales 44" Print Machines.
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1—9-Nip Open Soaper 50" face, Double Gear & Chain Drive.
2—Butterworth 50" Tommy Dodd Backfillers, S.S. Boxes & Agitators.
1—30' Vat Ager, Ball Bearing 50" Rolls.
1—10-Fan National Loop Dryer 9" Wide, revolving Sticks.
1—90" W & J Swing Tenter Frame.
1—20 Arm Smith Drum Skein Dyeing Machine.

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POSITIONS WANTED
(Continued from preceding page)

Textile Superintendent or Weaving Overseer available for foreign or domestic work, thoroughly experienced with carded and combed fabrics, good references, employee training experience, weaving specialist. PW-9813, Textile World.

Weave room overseer wants job in foreign mill. Experienced with Draper and Box looms. PW-9941, Textile World.

Technical sales or sales development by graduate textile engineer. Sales and dyeing and finishing experience. Age 31. Will relocate and travel. PW-9944, Textile World.

Textile Engineer, with 24 years experience in all phases of the manufacturing of woven labels, would consider the opportunity to start a factory in Southern California or abroad. PW-1028, Textile World.

Plant Superintendent. Thoroughly experienced in weaving, slashing, warping, on all types of Draper and C & K looms. Will accept domestic or overseas position. PW-1063, Textile World.

Supt. Dyeing and Finishing. Experience, Sweaters, Piece Goods, Hosiery, all Fibers, Fabrics and Blends. PW-1060, Textile World.

SELLING OPPORTUNITY WANTED

Textile Consultant to be in Europe from early May to November. Seeks assignments in fibres, fabrics, processes, machinery or market lines. Rene Bouvet, 517 Brookfield Rd., Drexel Hill, Pa.

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3—FIDELITY D. ARM REELERS . . KNOCK OFFS
14—ATWOOD #100 TWISTERS . . HEADLESS . . 6½" SPACING
200—UNIVERSAL #50 CONERS . . LATE TYPE . . GEAR GAIN
15—U. S. REDRAWS . . 60 SPINDLE . . SPINDLELESS
12—SPINDLES UNIVERSAL KING SPOOLERS
3—U. S. TEXTILE DOUBLERS . . 116 SPINDLES EA.
1—FOSTER MODEL 102 . . 7" TRAVERSE . . 1953
1—MODEL 110 SPECIAL . . 240 SPINDLES . . 2 LB.
3—WARNER SWASSEY PIN DRAFTERS . . DUAL TYPE

WEAVING

24—C-4'S . . 76" . . CONV. . . 1950
18—DRAPER 50" XD LOOM . . 1951 . . DIEHL DRIVES
30—C & K C-4 LOOMS . . 72" . . 25 HARNESS . . MULTIPLIERS
1—800 END SIPP CREEL . . 1951
2—TERRILL BOBBIN STRIPPERS . . MODEL 735
2—JOHNSON SLASHERS . . 1950 30 X 60 . . 7 CAN S.S. V.S. DRIVE . . S.S. QUETCH . . SIZE KETTLES
2—SIPP 1951 93" D.Y. WARPER . . MAGNESIUM . . HI SPEED
1—COCKER 54¼" WARPER . . 1950 . . STATIC ELIMINATORS
1—COCKER 42" WARPER . . 1952
1—USTER WARP KNOTTER . . 1955

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50 LB. SMITH DRUM ROTARY . . RD 12 . . 4 POCKET
25—SMITH DRUM ROTARY RD. 12 . . 3 POCKET
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3—8' R & L BECKS . . 67" D . . S.S. TOT. ENCLOSED
1—4' R & L BECK . . 60" D . . S.S. . . OPEN
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2—EXTRACTORS FLETCHER . . 30" AND 48" S.S.

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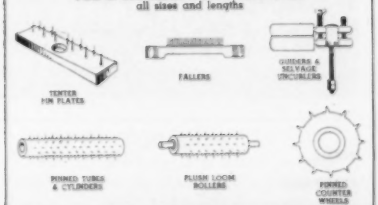

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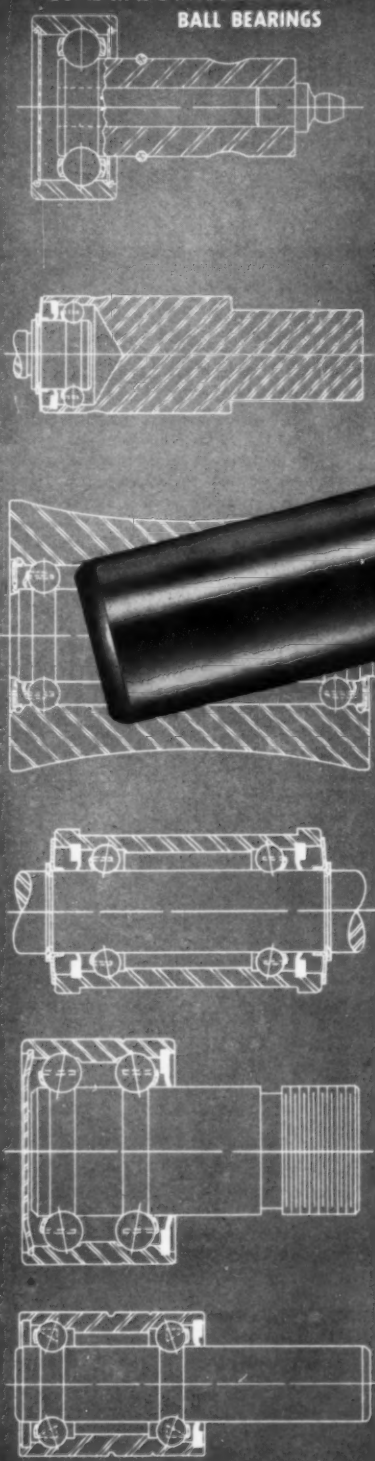
SOME M-R-C INTEGRAL SHAFT BALL BEARINGS



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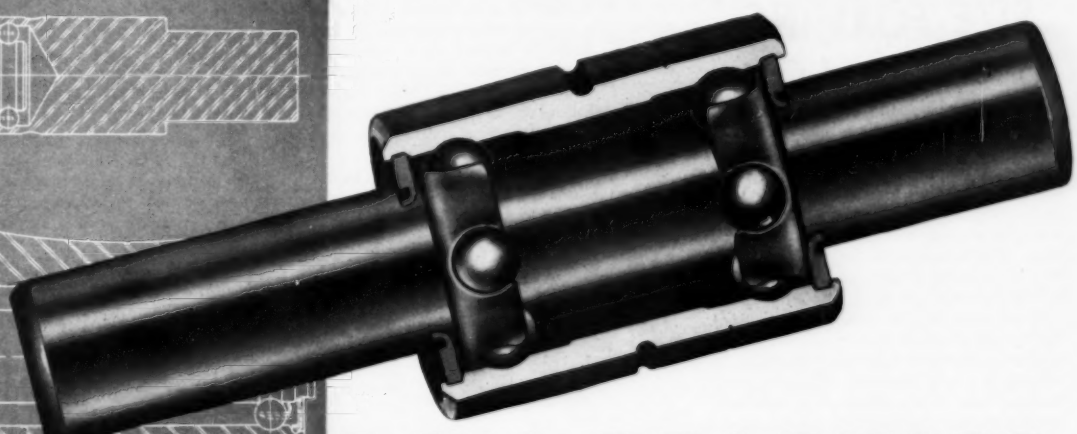

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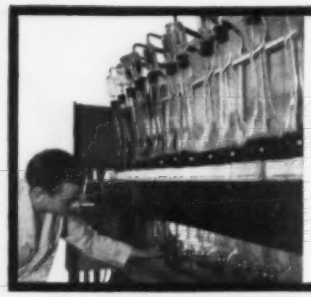


What You Should Know About STARCH *

SIZE FOAMING
Its Cause and Cure

Foaming in the size applicator is a troublesome problem which slasher operators have experienced at one time or another. It may develop with no apparent cause or reason, persist for a day or so, and then disappear leaving soft warps in the weave room.

Actually, a small amount of foam is desirable. Size is composed of starch, waxes, fats and oils in a water solution. It is a colloidal solution. A small amount of foam indicates good emulsification assuring equal distribution of all of the ingredients in the solution. Excessive foaming, however, is a condition to be avoided. The level of a foaming size in the size box is both misleading to the operator and the automatic level controls. Foaming will also cause overflowing of the size box, cooking or storage kettles. Not only is sizing solids lost, but the mess interferes with good working conditions.

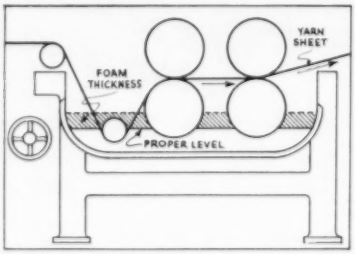
There are many remedies or cures offered for foaming. However, as in most instances, the cure may solve one problem and at the same time create others which are as serious or more damaging. Therefore, the best and safest solution to any problem is to find the cause. Once the cause has been determined, usually the solution becomes obvious.

Foam is the condition that exists when an excessive amount of air is held in suspension in a solution. The concentration of solids in a foaming solution is much less than in a non-foaming one. Hence, a warp sheet passing through foam cannot pick up the correct amount of size. Soft warps are the results.

What is the cause of excessive foaming in size mixtures? Why will one batch of size foam and another batch made with the same ingredients from the same lot under the same conditions not foam? Or, why will excessive foaming persist for a day or so and then disappear?

The above questions will, of course, lead to other questions. If it is desired to have a water solution or mixture foam, what could be added to provide this phenomenon? The answer readily comes to mind —soap. Soap in solution is a universal cleansing agent because of its ability to produce foam, more commonly called "suds". Following this line of thinking further, how can soap be produced in the preparation of a size?

Soap is the alkali salt of a fatty acid. Fatty acids are a part of all vegetable and animal oils and fats. Since fats and oils are important ingredients in preparing a balanced size, one of the important ingredients in soap is present in the size



cooking kettle. The only other part required to produce soap is the alkali. It must be mentioned here that certain types of alkali produces certain types of soaps. One class of alkalies produces a soluble soap and another class produces insoluble soap. Soluble soaps, as the name signifies disperses in a water medium and will foam abundantly. Insoluble soaps will not disperse or go into solution. They will usually float on the surface and will not produce foam. There are only two other ingredients involved in making size—starch and water. Therefore, if foaming of the size is noted resulting from the formation of a soap in the size kettle, then the alkali must be introduced with either of these two ingredients.

Refined corn starch manufactured by the wet milling process is a highly refined product. Approximately 125 gallons of purified water is used directly for each 100 pounds of finished starch. (1) Each starch granule is washed several times. Chemical analysis will show less than one tenth of a percent ash. Furthermore, the most important, refined corn starch is manufactured to meet definite pH specifications. This specification is usually around 6.0 pH which is on the acid side. This means there can be no active alkali present to react with the fats and oils to produce a soap.

By the process of elimination, this leaves only the water to be considered. Water is the most universal solvent. In the streams and rivers, both surface and underground, it comes in constant contact with the minerals, metals, and salts that make up the earth's surface. Its acidity or alkalinity (pH) may vary from neutral to acid or alkaline depending upon the type of the earth's compounds with which the waters have been in contact. Water, then, can be the carrier of the materials which may cause size foaming problems. Where the water supply is from a small stream or lake, the foaming condition may appear and disappear from time to time, due to certain variations in rainfall.

As mentioned previously, size foaming is the result of soluble soap formation. Soap is made by the action of an alkali on a fat. The medium in which this reaction occurs must be alkaline. It will not take place in an acid or neutral medium. Therefore, the solution of the size foaming problem is the maintenance of a proper acidity and alkalinity of the ingredients. This in turn will control the acidity and/or alkalinity (pH) of the size mixture.

Water is normally alkaline. From municipal filtration plants the pH will be around 7.5 to 8.5. Refined corn starch is usually produced, unless otherwise specified, with a pH of 6.0-6.5. The acid pH of the corn starch will balance the alkaline pH of the water in a size mix resulting in a pH around neutral (7) or slightly on the acid side. This will eliminate excessive foaming. Where the corn refiner has knowledge of the water characteristics and they may present a problem (high alkaline pH), he will adjust the pH of the starch to counteract the alkalinity of the water.

(1) Corn Industries Res. Foundation. *The Story of Corn and its Products* 2nd Edition. P. 11

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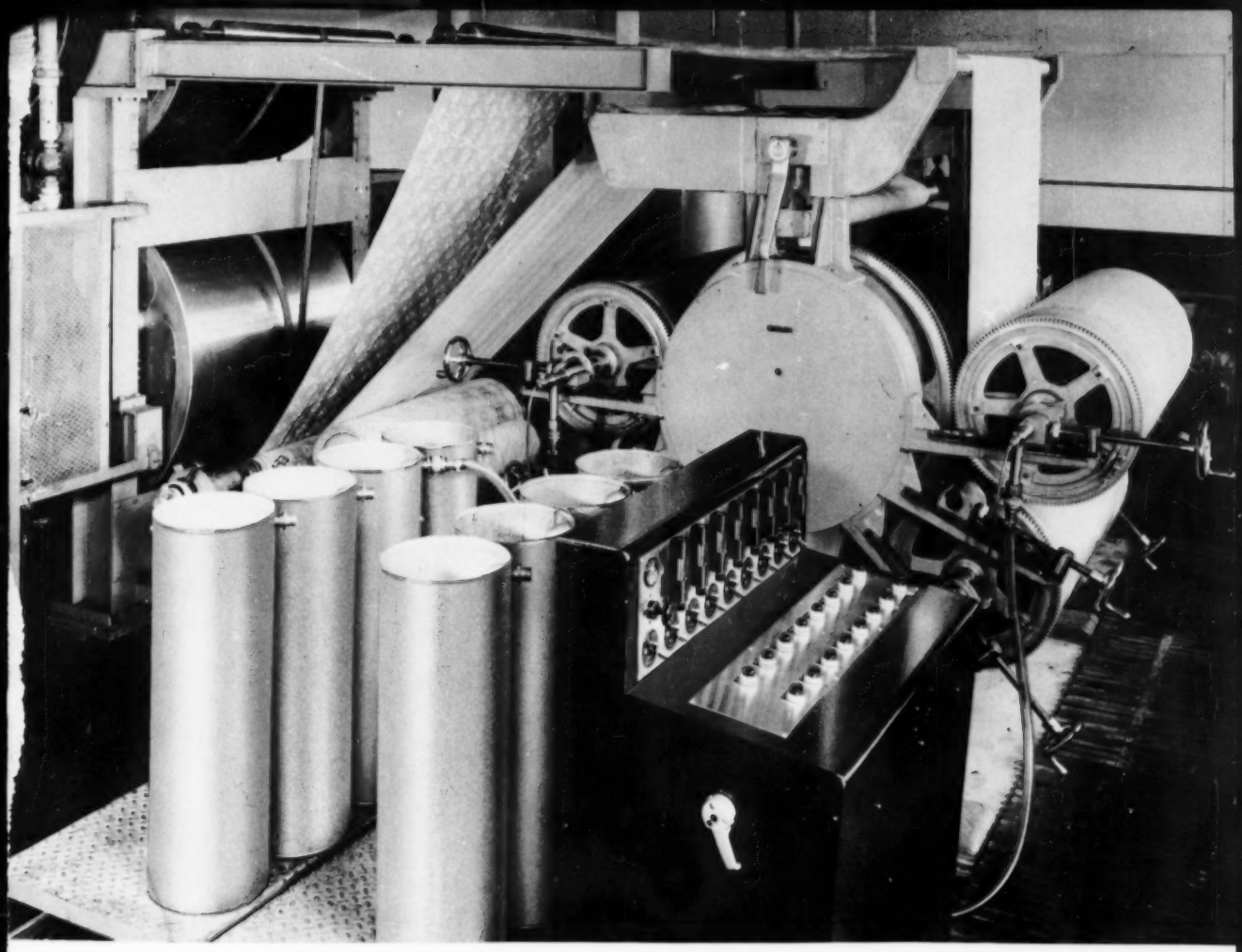

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Write for descriptive folder of this machine, which is for sale in the United States.

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